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SHICHIJO, Shigeki

<120> TUMOR ANTIGEN

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Asp Val Tyr Gly Val Phe Gln Phe Lys Val
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<400> 208

Ser Leu Pro Leu Phe Leu Pro Pro Phe Leu
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<400> 211

Arg Leu His Asn Asp Arg Val Tyr Tyr Val
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<400> 213

Tyr Val Ser Glu Lys Ile Met Lys Leu
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Tyr Asp Ser Thr His Gly Lys Phe His Gly Thr Val Lys Ala Glu Asn
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Gly Lys Leu Val Ile Asn Gly Asn Pro Ile Thr Ile Phe Gln Glu Arg
65                  70                  75                  80

Asp Pro Ser Lys Ile Lys Trp Gly Asp Ala Gly Ala Glu Tyr Val Val
                85                  90                  95

Glu Ser Thr Gly Val Phe Thr Thr Met Glu Lys Ala Gly Ala His Leu
            100                 105                 110

Gln Gly Gly Ala Lys Arg Val Ile Ile Ser Ala Pro Ser Ala Asp Ala
        115                 120                 125

Pro Met Phe Val Met Gly Val Asn His Glu Lys Tyr Asp Asn Ser Leu
    130                 135                 140

Lys Ile Ile Ser Asn Ala Ser Cys Thr Thr Asn Cys Leu Ala Pro Leu
145                 150                 155                 160
```

Ala Lys Val Ile His Asp Asn Phe Gly Ile Val Glu Gly Leu Met Thr
165 170 175

Thr Val His Ala Ile Thr Ala Thr Gln Lys Thr Val Asp Gly Pro Ser
180 185 190

Gly Lys Leu Trp Arg Asp Gly Arg Gly Ala Leu Gln Asn Ile Ile Pro
195 200 205

Ala Ser Thr Gly Ala Ala Lys Ala Val Gly Lys Val Ile Pro Glu Leu
210 215 220

Asn Gly Lys Leu Thr Gly Met Ala Phe Arg Val Pro Thr Ala Asn Val
225 230 235 240

Ser Val Val Asp Leu Thr Cys Arg Leu Glu Lys Pro Ala Lys Tyr Asp
245 250 255

Asp Ile Lys Lys Val Val Lys Gln Ala Ser Glu Gly Pro Leu Lys Gly
260 265 270

Ile Leu Gly Tyr Thr Glu His Gln Val Val Ser Ser Asp Phe Asn Ser
275 280 285

Asp Thr His Ser Ser Thr Phe Asp Ala Gly Ala Gly Ile Ala Leu Asn
290 295 300

Asp His Phe Val Lys Leu Ile Ser Trp Tyr Asp Asn Glu Phe Gly Tyr
305 310 315 320

Ser Asn Arg Val Val Asp Leu Met Ala His Met Ala Ser Lys Glu
325 330 335

<210> 215

<211> 599
<212> PRT
<213> Homo sapiens

<400> 215

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Met Ala Asp Lys Leu Thr Arg Ile Ala Ile Val Asn His Asp Lys Cys
1               5                  10                  15

Lys Pro Lys Lys Cys Arg Gln Glu Cys Lys Lys Ser Cys Pro Val Val
            20                  25                  30

Arg Met Gly Lys Leu Cys Ile Glu Val Thr Pro Gln Ser Lys Ile Ala
        35                  40                  45

Trp Ile Ser Glu Thr Leu Cys Ile Gly Cys Gly Ile Cys Ile Lys Lys
    50                  55                  60

Cys Pro Phe Gly Ala Leu Ser Ile Val Asn Leu Pro Ser Asn Leu Glu
65                  70                  75                  80

Lys Glu Thr Thr His Arg Tyr Cys Ala Asn Ala Phe Lys Leu His Arg
                85                  90                  95

Leu Pro Ile Pro Arg Pro Gly Glu Val Leu Gly Leu Val Gly Thr Asn
            100                 105                 110

Gly Ile Gly Lys Ser Thr Ala Leu Lys Ile Leu Ala Gly Lys Gln Lys
        115                 120                 125

Pro Asn Leu Gly Lys Tyr Asp Asp Pro Pro Asp Trp Gln Glu Ile Leu
    130                 135                 140

Thr Tyr Phe Arg Gly Ser Glu Leu Gln Asn Tyr Phe Thr Lys Ile Leu
145                 150                 155                 160
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Glu Asp Asp Leu Lys Ala Ile Ile Lys Pro Gln Tyr Val Asp Gln Ile
165 170 175

Pro Lys Ala Ala Lys Gly Thr Val Gly Ser Ile Leu Asp Arg Lys Asp
180 185 190

Glu Thr Lys Thr Gln Ala Ile Val Cys Gln Gln Leu Asp Leu Thr His
195 200 205

Leu Lys Glu Arg Asn Val Glu Asp Leu Ser Gly Gly Glu Leu Gln Arg
210 215 220

Phe Ala Cys Ala Val Val Cys Ile Gln Lys Ala Asp Ile Phe Met Phe
225 230 235 240

Asp Glu Pro Ser Ser Tyr Leu Asp Val Lys Gln Arg Leu Lys Ala Ala
245 250 255

Ile Thr Ile Arg Ser Leu Ile Asn Pro Asp Arg Tyr Ile Ile Val Val
260 265 270

Glu His Asp Leu Ser Val Leu Asp Tyr Leu Ser Asp Phe Ile Cys Cys
275 280 285

Leu Tyr Gly Val Pro Ser Ala Tyr Gly Val Val Thr Met Pro Phe Ser
290 295 300

Val Arg Glu Gly Ile Asn Ile Phe Leu Asp Gly Tyr Val Pro Thr Glu
305 310 315 320

Asn Leu Arg Phe Arg Asp Ala Ser Leu Val Phe Lys Val Ala Glu Thr
325 330 335

Ala Asn Glu Glu Glu Val Lys Lys Met Cys Met Tyr Lys Tyr Pro Gly
340 345 350

Met Lys Lys Lys Met Gly Glu Phe Glu Leu Ala Ile Val Ala Gly Glu
355 360 365

Phe Thr Asp Ser Glu Ile Met Val Met Leu Gly Glu Asn Gly Thr Gly
370 375 380

Lys Thr Thr Phe Ile Arg Met Leu Ala Gly Arg Leu Lys Pro Asp Glu
385 390 395 400

Gly Gly Glu Val Pro Val Leu Asn Val Ser Tyr Lys Pro Gln Lys Ile
405 410 415

Ser Pro Lys Ser Thr Gly Ser Val Arg Gln Leu Leu His Glu Lys Ile
420 425 430

Arg Asp Ala Tyr Thr His Pro Gln Phe Val Thr Asp Val Met Lys Pro
435 440 445

Leu Gln Ile Glu Asn Ile Ile Asp Gln Glu Val Gln Thr Leu Ser Gly
450 455 460

Gly Glu Leu Gln Arg Val Ala Leu Ala Leu Cys Leu Gly Lys Pro Ala
465 470 475 480

Asp Val Tyr Leu Ile Asp Glu Pro Ser Ala Tyr Leu Asp Ser Glu Gln
485 490 495

Arg Leu Met Ala Ala Arg Val Val Lys Arg Phe Ile Leu His Ala Lys
500 505 510

Lys Thr Ala Phe Val Val Glu His Asp Phe Ile Met Ala Thr Tyr Leu
515 520 525

Ala Asp Arg Val Ile Val Phe Asp Gly Val Pro Ser Lys Asn Thr Val
530 535 540

Ala Asn Ser Pro Gln Thr Leu Leu Ala Gly Met Asn Lys Phe Leu Ser
545 550 555 560

Gln Leu Glu Ile Thr Phe Arg Arg Asp Pro Asn Asn Tyr Arg Pro Arg
565 570 575

Ile Asn Lys Leu Asn Ser Ile Lys Asp Val Glu Gln Lys Lys Ser Gly
580 585 590

Asn Tyr Phe Phe Leu Asp Asp
595

<210> 216
<211> 101
<212> PRT
<213> Homo sapiens

<400> 216

Met Ser Asp Gln Glu Ala Lys Pro Ser Thr Glu Asp Leu Gly Asp Lys
1 5 10 15

Lys Glu Gly Glu Tyr Ile Lys Leu Lys Val Ile Gly Gln Asp Ser Ser
20 25 30

Glu Ile His Phe Lys Val Lys Met Thr Thr His Leu Lys Lys Leu Lys
35 40 45

Glu Ser Tyr Cys Gln Arg Gln Gly Val Pro Met Asn Ser Leu Arg Phe
50 55 60

Leu Phe Glu Gly Gln Arg Ile Ala Asp Asn His Thr Pro Lys Glu Leu
65 70 75 80

Gly Met Glu Glu Glu Asp Val Ile Glu Val Tyr Gln Glu Gln Thr Gly
85 90 95

Gly His Ser Thr Val
100

<210> 217
<211> 249
<212> PRT
<213> Homo sapiens

<400> 217

Met Lys Leu Asn Ile Ser Phe Pro Ala Thr Gly Cys Gln Lys Leu Ile
1 5 10 15

Glu Val Asp Asp Glu Arg Lys Leu Arg Thr Phe Tyr Glu Lys Arg Met
20 25 30

Ala Thr Glu Val Ala Ala Asp Ala Leu Gly Glu Glu Trp Lys Gly Tyr
35 40 45

Val Val Arg Ile Ser Gly Gly Asn Asp Lys Gln Gly Phe Pro Met Lys
50 55 60

Gln Gly Val Leu Thr His Gly Arg Val Arg Leu Leu Leu Ser Lys Gly
65 70 75 80

His Ser Cys Tyr Arg Pro Arg Arg Thr Gly Glu Arg Lys Arg Lys Ser
85 90 95

Val Arg Gly Cys Ile Val Asp Ala Asn Leu Ser Val Leu Asn Leu Val
100 105 110

Ile Val Lys Lys Gly Glu Lys Asp Ile Pro Gly Leu Thr Asp Thr Thr
115 120 125

Val Pro Arg Arg Leu Gly Pro Lys Arg Ala Ser Arg Ile Arg Lys Leu
130 135 140

Phe Asn Leu Ser Lys Glu Asp Asp Val Arg Gln Tyr Val Val Arg Lys
145 150 155 160

Pro Leu Asn Lys Glu Gly Lys Lys Pro Arg Thr Lys Ala Pro Lys Ile
165 170 175

Gln Arg Leu Val Thr Pro Arg Val Leu Gln His Lys Arg Arg Arg Ile
180 185 190

Ala Leu Lys Lys Gln Arg Thr Lys Lys Asn Lys Glu Glu Ala Ala Glu
195 200 205

Tyr Ala Lys Leu Leu Ala Lys Arg Met Lys Glu Ala Lys Glu Lys Arg
210 215 220

Gln Glu Gln Ile Ala Lys Arg Arg Arg Leu Ser Ser Leu Arg Ala Ser
225 230 235 240

Thr Ser Lys Ser Glu Ser Ser Gln Lys
245

<210> 218
<211> 184
<212> PRT
<213> Homo sapiens

<400> 218

Met Arg Glu Tyr Lys Leu Val Val Leu Gly Ser Gly Gly Val Gly Lys
1 5 10 15

Ser Ala Leu Thr Val Gln Phe Val Gln Gly Ile Phe Val Glu Lys Tyr

20 25 30

Asp Pro Thr Ile Glu Asp Ser Tyr Arg Lys Gln Val Glu Val Asp Ala
35 40 45

Gln Gln Cys Met Leu Glu Ile Leu Asp Thr Ala Gly Thr Glu Gln Phe
50 55 60

Thr Ala Met Arg Asp Leu Tyr Met Lys Asn Gly Gln Gly Phe Ala Leu
65 70 75 80

Val Tyr Ser Ile Thr Ala Gln Ser Thr Phe Asn Asp Leu Gln Asp Leu
85 90 95

Arg Glu Gln Ile Leu Arg Val Lys Asp Thr Asp Asp Val Pro Met Ile
100 105 110

Leu Val Gly Asn Lys Cys Asp Leu Glu Asp Glu Arg Val Val Gly Lys
115 120 125

Glu Gln Gly Gln Asn Leu Ala Arg Gln Trp Asn Asn Cys Ala Phe Leu
130 135 140

Glu Ser Ser Ala Lys Ser Lys Ile Asn Val Asn Glu Ile Phe Tyr Asp
145 150 155 160

Leu Val Arg Gln Ile Asn Arg Lys Thr Pro Val Pro Gly Lys Ala Arg
165 170 175

Lys Lys Ser Ser Cys Gln Leu Leu
180

<210> 219
<211> 162
<212> PRT

<213> Homo sapiens

<400> 219

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Met Lys Glu Thr Ile Met Asn Gln Glu Lys Leu Ala Lys Leu Gln Ala
1               5                  10                  15

Gln Val Arg Ile Gly Gly Lys Gly Thr Ala Arg Arg Lys Lys Lys Val
            20                  25                  30

Val His Arg Thr Ala Thr Ala Asp Asp Lys Lys Leu Gln Phe Ser Leu
        35                  40                  45

Lys Lys Leu Gly Val Asn Asn Ile Ser Gly Ile Glu Glu Val Asn Met
    50                  55                  60

Phe Thr Asn Gln Gly Thr Val Ile His Phe Asn Asn Pro Lys Val Gln
65                  70                  75                  80

Ala Ser Leu Ala Ala Asn Thr Phe Thr Ile Thr Gly His Ala Glu Thr
                85                  90                  95

Lys Gln Leu Thr Glu Met Leu Pro Ser Ile Leu Asn Gln Leu Gly Ala
            100                 105                 110

Asp Ser Leu Thr Ser Leu Arg Arg Leu Ala Glu Ala Leu Pro Lys Gln
        115                 120                 125

Ser Val Asp Gly Lys Ala Pro Leu Ala Thr Gly Glu Asp Asp Asp Asp
    130                 135                 140

Glu Val Pro Asp Leu Val Glu Asn Phe Asp Glu Ala Ser Lys Asn Glu
145                 150                 155                 160

Ala Asn
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<210> 220
<211> 180
<212> PRT
<213> Homo sapiens

<400> 220

Met Arg Pro Leu Thr Glu Glu Glu Thr Arg Val Met Phe Glu Lys Ile
1 5 10 15

Ala Lys Tyr Ile Gly Glu Asn Leu Gln Leu Leu Val Asp Arg Pro Asp
20 25 30

Gly Thr Tyr Cys Phe Arg Leu His Asn Asp Arg Val Tyr Tyr Val Ser
35 40 45

Glu Lys Ile Met Lys Leu Ala Ala Asn Ile Ser Gly Asp Lys Leu Val
50 55 60

Ser Leu Gly Thr Cys Phe Gly Lys Phe Thr Lys Thr His Lys Phe Arg
65 70 75 80

Leu His Val Thr Ala Leu Asp Tyr Leu Ala Pro Tyr Ala Lys Tyr Lys
85 90 95

Val Trp Ile Lys Pro Gly Ala Glu Gln Ser Phe Leu Tyr Gly Asn His
100 105 110

Val Leu Lys Ser Gly Leu Gly Arg Ile Thr Glu Asn Thr Ser Gln Tyr
115 120 125

Gln Gly Val Val Val Tyr Ser Met Ala Asp Ile Pro Leu Gly Phe Gly
130 135 140

Val Ala Ala Lys Ser Thr Gln Asp Cys Arg Lys Val Asp Pro Met Ala

145 150 155 160

Ile Val Val Phe His Gln Ala Asp Ile Gly Glu Tyr Val Arg His Glu
165 170 175

Glu Thr Leu Thr
180

<210> 221
<211> 166
<212> PRT
<213> Homo sapiens

<400> 221

Met Ala Ala Thr Met Phe Arg Ala Thr Leu Arg Gly Trp Arg Thr Gly
1 5 10 15

Val Gln Arg Gly Cys Gly Leu Arg Leu Leu Ser Gln Thr Gln Gly Pro
20 25 30

Pro Asp Tyr Pro Arg Phe Val Glu Ser Val Asp Glu Tyr Gln Phe Val
35 40 45

Glu Arg Leu Leu Pro Ala Thr Arg Ile Pro Asp Pro Pro Lys His Glu
50 55 60

His Tyr Pro Thr Pro Ser Gly Trp Gln Pro Pro Arg Asp Pro Pro Pro
65 70 75 80

Asn Leu Pro Tyr Phe Val Arg Arg Ser Arg Met His Asn Ile Pro Val
85 90 95

Tyr Lys Asp Ile Thr His Gly Asn Arg Gln Met Thr Val Ile Arg Lys
100 105 110

Val Glu Gly Asp Ile Trp Ala Leu Gln Lys Asp Val Glu Asp Phe Leu
115 120 125

Ser Pro Leu Leu Gly Lys Thr Pro Val Thr Gln Val Asn Glu Val Thr
130 135 140

Gly Thr Leu Arg Ile Lys Gly Tyr Phe Asp Gln Glu Leu Lys Ala Trp
145 150 155 160

Leu Leu Glu Lys Gly Phe
165

<210> 222
<211> 194
<212> PRT
<213> Homo sapiens

<400> 222

Met Ala Ala Ser Leu Val Gly Lys Lys Ile Val Phe Val Thr Gly Asn
1 5 10 15

Ala Lys Lys Leu Glu Glu Val Val Gln Ile Leu Gly Asp Lys Phe Pro
20 25 30

Cys Thr Leu Val Ala Gln Lys Ile Asp Leu Pro Glu Tyr Gln Gly Glu
35 40 45

Pro Asp Glu Ile Ser Ile Gln Lys Cys Gln Glu Ala Val Arg Gln Val
50 55 60

Gln Gly Pro Val Leu Val Glu Asp Thr Cys Leu Cys Phe Asn Ala Leu
65 70 75 80

Gly Gly Leu Pro Gly Pro Tyr Ile Lys Trp Phe Leu Glu Lys Leu Lys
85 90 95

Pro Glu Gly Leu His Gln Leu Leu Ala Gly Phe Glu Asp Lys Ser Ala
100 105 110

Tyr Ala Leu Cys Thr Phe Ala Leu Ser Thr Gly Asp Pro Ser Gln Pro
115 120 125

Val Arg Leu Phe Arg Gly Arg Thr Ser Gly Arg Ile Val Ala Pro Arg
130 135 140

Gly Cys Gln Asp Phe Gly Trp Asp Pro Cys Phe Gln Pro Asp Gly Tyr
145 150 155 160

Glu Gln Thr Tyr Ala Glu Met Pro Lys Ala Glu Lys Asn Ala Val Ser
165 170 175

His Arg Phe Arg Ala Leu Leu Glu Leu Gln Glu Tyr Phe Gly Ser Leu
180 185 190

Ala Ala

<210> 223
<211> 466
<212> PRT
<213> Homo sapiens

<400> 223

Met Ser Tyr Pro Gly Tyr Pro Pro Thr Gly Tyr Pro Pro Phe Pro Gly
1 5 10 15

Tyr Pro Pro Ala Gly Gln Glu Ser Ser Phe Pro Pro Ser Gly Gln Tyr
20 25 30

Pro Tyr Pro Ser Gly Phe Pro Pro Met Gly Gly Gly Ala Tyr Pro Gln
35 40 45

Val Pro Ser Ser Gly Tyr Pro Gly Ala Gly Gly Tyr Pro Ala Pro Gly
50 55 60

Gly Tyr Pro Ala Pro Gly Gly Tyr Pro Gly Ala Pro Gln Pro Gly Gly
65 70 75 80

Ala Pro Ser Tyr Pro Gly Val Pro Pro Gly Gln Gly Phe Gly Val Pro
85 90 95

Pro Gly Gly Ala Gly Phe Ser Gly Tyr Pro Gln Pro Pro Ser Gln Ser
100 105 110

Tyr Gly Gly Gly Pro Ala Gln Val Pro Leu Pro Gly Gly Phe Pro Gly
115 120 125

Gly Gln Met Pro Ser Gln Tyr Pro Gly Gly Gln Pro Thr Tyr Pro Ser
130 135 140

Gln Pro Ala Thr Val Thr Gln Val Thr Gln Gly Thr Ile Arg Pro Ala
145 150 155 160

Ala Asn Phe Asp Ala Ile Arg Asp Ala Glu Ile Leu Arg Lys Ala Met
165 170 175

Lys Gly Phe Gly Thr Asp Glu Gln Ala Ile Val Asp Val Val Ala Asn
180 185 190

Arg Ser Asn Asp Gln Arg Gln Lys Ile Lys Ala Ala Phe Lys Thr Ser
195 200 205

Tyr Gly Lys Asp Leu Ile Lys Asp Leu Lys Ser Glu Leu Ser Gly Asn
210 215 220

Met Glu Glu Leu Ile Leu Ala Leu Phe Met Pro Pro Thr Tyr Tyr Asp
225 230 235 240

Ala Trp Ser Leu Arg Lys Ala Met Gln Gly Ala Gly Thr Gln Glu Arg
245 250 255

Val Leu Ile Glu Ile Leu Cys Thr Arg Thr Asn Gln Glu Ile Arg Glu
260 265 270

Ile Val Arg Cys Tyr Gln Ser Glu Phe Gly Arg Asp Leu Glu Lys Asp
275 280 285

Ile Arg Ser Asp Thr Ser Gly His Phe Glu Arg Leu Leu Val Ser Met
290 295 300

Cys Gln Gly Asn Arg Asp Glu Asn Gln Ser Ile Asn His Gln Met Ala
305 310 315 320

Gln Glu Asp Ala Gln Arg Leu Tyr Gln Ala Gly Glu Gly Arg Leu Gly
325 330 335

Thr Asp Glu Ser Cys Phe Asn Met Ile Leu Ala Thr Arg Ser Phe Pro
340 345 350

Gln Leu Arg Ala Thr Met Glu Ala Tyr Ser Arg Met Ala Asn Arg Asp
355 360 365

Leu Leu Ser Ser Val Ser Arg Glu Phe Ser Gly Tyr Val Glu Ser Gly
370 375 380

Leu Lys Thr Ile Leu Gln Cys Ala Leu Asn Arg Pro Ala Phe Phe Ala
385 390 395 400

Glu Arg Leu Tyr Tyr Ala Met Lys Gly Ala Gly Thr Asp Asp Ser Thr
405 410 415

Leu Val Arg Ile Val Val Thr Arg Ser Glu Ile Asp Leu Val Gln Ile
420 425 430

Lys Gln Met Phe Ala Gln Met Tyr Gln Lys Thr Leu Gly Thr Met Ile
435 440 445

Ala Gly Asp Thr Ser Gly Asp Tyr Arg Arg Leu Leu Leu Ala Ile Val
450 455 460

Gly Gln
465

<210> 224
<211> 130
<212> PRT
<213> Homo sapiens

<400> 224

Met Val Arg Met Asn Val Leu Ala Asp Ala Leu Lys Ser Ile Asn Asn
1 5 10 15

Ala Glu Lys Arg Gly Lys Arg Gln Val Leu Ile Arg Pro Cys Ser Lys
20 25 30

Val Ile Val Arg Phe Leu Thr Val Met Met Lys His Gly Tyr Ile Gly
35 40 45

Glu Phe Glu Ile Ile Asp Asp His Arg Ala Gly Lys Ile Val Val Asn
50 55 60

Leu Thr Gly Arg Leu Asn Lys Cys Gly Val Ile Ser Pro Arg Phe Asp
65 70 75 80

Val Gln Leu Lys Asp Leu Glu Lys Trp Gln Asn Asn Leu Leu Pro Ser

85 90 95

Arg Gln Phe Gly Phe Ile Val Leu Thr Thr Ser Ala Gly Ile Met Asp
100 105 110

His Glu Glu Ala Arg Arg Lys His Thr Gly Gly Lys Ile Leu Gly Phe
115 120 125

Phe Phe
130

<210> 225
<211> 192
<212> PRT
<213> Homo sapiens

<400> 225

Met Lys Thr Ile Leu Ser Asn Gln Thr Val Asp Ile Pro Glu Asn Val
1 5 10 15

Asp Ile Thr Leu Lys Gly Arg Thr Val Ile Val Lys Gly Pro Arg Gly
20 25 30

Thr Leu Arg Arg Asp Phe Asn His Ile Asn Val Glu Leu Ser Leu Leu
35 40 45

Gly Lys Lys Lys Lys Arg Leu Arg Val Asp Lys Trp Trp Gly Asn Arg
50 55 60

Lys Glu Leu Ala Thr Val Arg Thr Ile Cys Ser His Val Gln Asn Met
65 70 75 80

Ile Lys Gly Val Thr Leu Gly Phe Arg Tyr Lys Met Arg Ser Val Tyr
85 90 95

Ala His Phe Pro Ile Asn Val Val Ile Gln Glu Asn Gly Ser Leu Val
100 105 110

Glu Ile Arg Asn Phe Leu Gly Glu Lys Tyr Ile Arg Arg Val Arg Met
115 120 125

Arg Pro Gly Val Ala Cys Ser Val Ser Gln Ala Gln Lys Asp Glu Leu
130 135 140

Ile Leu Glu Gly Asn Asp Ile Glu Leu Val Ser Asn Ser Ala Ala Leu
145 150 155 160

Ile Gln Gln Ala Thr Thr Val Lys Asn Lys Asp Ile Arg Lys Phe Leu
165 170 175

Asp Gly Ile Tyr Val Ser Glu Lys Gly Thr Val Gln Gln Ala Asp Glu
180 185 190

<210> 226
<211> 67
<212> PRT
<213> Homo sapiens

<400> 226

Met Leu Leu Tyr Ile Asn Arg Ala Arg Pro Glu Gly Gly Arg Gly Ala
1 5 10 15

Gly Ala Glu Gly Arg Ser Asn Gln Ile Ser Asn Phe Leu Leu Ile Ile
20 25 30

Asn Pro Leu Phe Thr Ala Val Ser Val Val Ile Phe Lys Ile Phe Leu
35 40 45

Ile Phe Phe Phe Phe Leu Leu Leu Leu Phe Thr Ser Cys Val Tyr Val
50 55 60

Gly Asn Leu
65

<210> 227
<211> 66
<212> PRT
<213> Homo sapiens

<400> 227

Met His Phe His Asn Ile Cys Leu Leu Glu Arg Ser Ile Ile Ser Glu
1 5 10 15

Lys Tyr Gln Val Phe Ile Lys Phe Leu Gly Met Ala Asp Ser Gln Asn
20 25 30

Met Leu Val Ser Leu Gln Tyr Ser Ser Arg Arg Ala Asn Gln Gly Arg
35 40 45

Ala Gly Met Arg Ser Asp Ile Cys Val Thr Lys Ser Ile Phe Leu Ile
50 55 60

Ser Leu
65

<210> 228
<211> 145
<212> PRT
<213> Homo sapiens

<400> 228

Met Ile Leu Gln Cys Ser Ile Glu Met Pro Asn Ile Ser Tyr Ala Trp
1 5 10 15

Lys Glu Leu Lys Glu Gln Leu Gly Glu Glu Ile Asp Ser Lys Val Lys
20 25 30

Gly Met Val Phe Leu Lys Gly Lys Leu Gly Val Cys Phe Asp Val Pro
35 40 45

Thr Ala Ser Val Thr Glu Ile Gln Glu Lys Trp His Asp Ser Arg Arg
50 55 60

Trp Gln Leu Ser Val Ala Thr Glu Gln Pro Glu Leu Glu Gly Pro Arg
65 70 75 80

Glu Gly Tyr Gly Gly Phe Arg Gly Gln Arg Glu Gly Ser Arg Gly Phe
85 90 95

Arg Gly Gln Arg Asp Gly Asn Arg Arg Phe Arg Gly Gln Arg Glu Gly
100 105 110

Ser Arg Gly Pro Arg Gly Gln Arg Ser Gly Gly Gly Asn Lys Ser Asn
115 120 125

Arg Ser Gln Asn Lys Gly Gln Lys Arg Ser Phe Ser Lys Ala Phe Gly
130 135 140

Gln
145

<210> 229
<211> 49
<212> PRT
<213> Homo sapiens

<400> 229

Met Arg Asn Ser Ala Thr Phe Lys Ser Phe Glu Asp Arg Val Gly Thr
1 5 10 15

Ile Lys Ser Lys Val Val Gly Asp Arg Glu Asn Gly Ser Asp Asn Leu
20 25 30

Pro Ser Ser Ala Gly Ser Gly Asp Lys Pro Leu Ser Asp Pro Ala Pro
35 40 45

Phe

<210> 230
<211> 208
<212> PRT
<213> Homo sapiens

<400> 230

Met Gly Ile Ser Arg Asp Asn Trp His Lys Arg Arg Lys Thr Gly Gly
1 5 10 15

Lys Arg Lys Pro Tyr His Lys Lys Arg Lys Tyr Glu Leu Gly Arg Pro
20 25 30

Ala Ala Asn Thr Lys Ile Gly Pro Arg Arg Ile His Thr Val Arg Val
35 40 45

Arg Gly Gly Asn Lys Lys Tyr Arg Ala Leu Arg Leu Asp Val Gly Asn
50 55 60

Phe Ser Trp Gly Ser Glu Cys Cys Thr Arg Lys Thr Arg Ile Ile Asp
65 70 75 80

Val Val Tyr Asn Ala Ser Asn Asn Glu Leu Val Arg Thr Lys Thr Leu
85 90 95

Val Lys Asn Cys Ile Val Leu Ile Asp Ser Thr Pro Tyr Arg Gln Trp
100 105 110

Tyr Glu Ser His Tyr Ala Leu Pro Leu Gly Arg Lys Lys Gly Ala Lys

115 120 125

Leu Thr Pro Glu Glu Glu Glu Ile Leu Asn Lys Lys Arg Ser Lys Lys
130 135 140

Ile Gln Lys Lys Tyr Asp Glu Arg Lys Lys Asn Ala Lys Ile Ser Ser
145 150 155 160

Leu Leu Glu Glu Gln Phe Gln Gln Gly Lys Leu Leu Ala Cys Ile Ala
165 170 175

Ser Arg Pro Gly Gln Cys Gly Arg Ala Asp Gly Tyr Val Leu Glu Gly
180 185 190

Lys Glu Leu Glu Phe Tyr Leu Arg Lys Ile Lys Ala Arg Lys Gly Lys
195 200 205

<210> 231
<211> 183
<212> PRT
<213> Homo sapiens

<400> 231

Met Thr Thr Ala Ser Thr Ser Gln Val Arg Gln Asn Tyr His Gln Asp
1 5 10 15

Ser Glu Ala Ala Ile Asn Arg Gln Ile Asn Leu Glu Leu Tyr Ala Ser
20 25 30

Tyr Val Tyr Leu Ser Met Ser Tyr Tyr Phe Asp Arg Asp Asp Val Ala
35 40 45

Leu Lys Asn Phe Ala Lys Tyr Phe Leu His Gln Ser His Glu Glu Arg
50 55 60

Glu His Ala Glu Lys Leu Met Lys Leu Gln Asn Gln Arg Gly Gly Arg
65 70 75 80

Ile Phe Leu Gln Asp Ile Lys Lys Pro Asp Cys Asp Asp Trp Glu Ser
85 90 95

Gly Leu Asn Ala Met Glu Cys Ala Leu His Leu Glu Lys Asn Val Asn
100 105 110

Gln Ser Leu Leu Glu Leu His Lys Leu Ala Thr Asp Lys Asn Asp Pro
115 120 125

His Leu Cys Asp Phe Ile Glu Thr His Tyr Leu Asn Glu Gln Val Lys
130 135 140

Ala Ile Lys Glu Leu Gly Asp His Val Thr Asn Leu Arg Lys Met Gly
145 150 155 160

Ala Pro Glu Ser Gly Leu Ala Glu Tyr Leu Phe Asp Lys His Thr Leu
165 170 175

Gly Asp Ser Asp Asn Glu Ser
180

<210> 232
<211> 403
<212> PRT
<213> Homo sapiens

<400> 232

Met Ser His Arg Lys Phe Ser Ala Pro Arg His Gly Ser Leu Gly Phe
1 5 10 15

Leu Pro Arg Lys Arg Ser Ser Arg His Arg Gly Lys Val Lys Ser Phe
20 25 30

Pro Lys Asp Asp Pro Ser Lys Pro Val His Leu Thr Ala Phe Leu Gly
35 40 45

Tyr Lys Ala Gly Met Thr His Ile Val Arg Glu Val Asp Arg Pro Gly
50 55 60

Ser Lys Val Asn Lys Lys Glu Val Val Glu Ala Val Thr Ile Val Glu
65 70 75 80

Thr Pro Pro Met Val Val Val Gly Ile Val Gly Tyr Val Glu Thr Pro
85 90 95

Arg Gly Leu Arg Thr Phe Lys Thr Val Phe Ala Glu His Ile Ser Asp
100 105 110

Glu Cys Lys Arg Arg Phe Tyr Lys Asn Trp His Lys Ser Lys Lys Lys
115 120 125

Ala Phe Thr Lys Tyr Cys Lys Lys Trp Gln Asp Glu Asp Gly Lys Lys
130 135 140

Gln Leu Glu Lys Asp Phe Ser Ser Met Lys Lys Tyr Cys Gln Val Ile
145 150 155 160

Arg Val Ile Ala His Thr Gln Met Arg Leu Leu Pro Leu Arg Gln Lys
165 170 175

Lys Ala His Leu Met Glu Ile Gln Val Asn Gly Gly Thr Val Ala Glu
180 185 190

Lys Leu Asp Trp Ala Arg Glu Arg Leu Glu Gln Gln Val Pro Val Asn
195 200 205

Gln Val Phe Gly Gln Asp Glu Met Ile Asp Val Ile Gly Val Thr Lys

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    210                 215                 220

Gly Lys Gly Tyr Lys Gly Val Thr Ser Arg Trp His Thr Lys Lys Leu
225                 230                 235                 240

Pro Arg Lys Thr His Arg Gly Leu Arg Lys Val Ala Cys Ile Gly Ala
                245                 250                 255

Trp His Pro Ala Arg Val Ala Phe Ser Val Ala Arg Ala Gly Gln Lys
            260                 265                 270

Gly Tyr His His Arg Thr Glu Ile Asn Lys Lys Ile Tyr Lys Ile Gly
        275                 280                 285

Gln Gly Tyr Leu Ile Lys Asp Gly Lys Leu Ile Lys Asn Asn Ala Ser
    290                 295                 300

Thr Asp Tyr Asp Leu Ser Asp Lys Ser Ile Asn Pro Leu Gly Gly Phe
305                 310                 315                 320

Val His Tyr Gly Glu Val Thr Asn Asp Phe Val Met Leu Lys Gly Cys
                325                 330                 335

Val Val Gly Thr Lys Lys Arg Val Leu Thr Leu Arg Lys Ser Leu Leu
            340                 345                 350

Val Gln Thr Lys Arg Arg Ala Leu Glu Lys Ile Asp Leu Lys Phe Ile
        355                 360                 365

Asp Thr Thr Ser Lys Phe Gly His Gly Arg Phe Gln Thr Met Glu Glu
    370                 375                 380

Lys Lys Ala Phe Met Gly Pro Leu Lys Lys Asp Arg Ile Ala Lys Glu
385                 390                 395                 400
```

Glu Gly Ala

<210> 233
<211> 480
<212> PRT
<213> Homo sapiens

<400> 233

Met Ala Val Ala Arg Ala Ala Leu Gly Pro Leu Val Thr Gly Leu Tyr
1 5 10 15

Asp Val Gln Ala Phe Lys Phe Gly Asp Phe Val Leu Lys Ser Gly Leu
20 25 30

Ser Ser Pro Ile Tyr Ile Asp Leu Arg Gly Ile Val Ser Arg Pro Arg
35 40 45

Leu Leu Ser Gln Val Ala Asp Ile Leu Phe Gln Thr Ala Gln Asn Ala
50 55 60

Gly Ile Ser Phe Asp Thr Val Cys Gly Val Pro Tyr Thr Ala Leu Pro
65 70 75 80

Leu Ala Thr Val Ile Cys Ser Thr Asn Gln Ile Pro Met Leu Ile Arg
85 90 95

Arg Lys Glu Thr Lys Asp Tyr Gly Thr Lys Arg Leu Val Glu Gly Thr
100 105 110

Ile Asn Pro Gly Glu Thr Cys Leu Ile Ile Glu Asp Val Val Thr Ser
115 120 125

Gly Ser Ser Val Leu Glu Thr Val Glu Val Leu Gln Lys Glu Gly Leu
130 135 140

Lys Val Thr Asp Ala Ile Val Leu Leu Asp Arg Glu Gln Gly Gly Lys
145 150 155 160

Asp Lys Leu Gln Ala His Gly Ile Arg Leu His Ser Val Cys Thr Leu
165 170 175

Ser Lys Met Leu Glu Ile Leu Glu Gln Gln Lys Lys Val Asp Ala Glu
180 185 190

Thr Val Gly Arg Val Lys Arg Phe Ile Gln Glu Asn Val Phe Val Ala
195 200 205

Ala Asn His Asn Gly Ser Pro Leu Ser Ile Lys Glu Ala Pro Lys Glu
210 215 220

Leu Ser Phe Gly Ala Arg Ala Glu Leu Pro Arg Ile His Pro Val Ala
225 230 235 240

Ser Lys Leu Leu Arg Leu Met Gln Lys Lys Glu Thr Asn Leu Cys Leu
245 250 255

Ser Ala Asp Val Ser Leu Ala Arg Glu Leu Leu Gln Leu Ala Asp Ala
260 265 270

Leu Gly Pro Ser Ile Cys Met Leu Lys Thr His Val Asp Ile Leu Asn
275 280 285

Asp Phe Thr Leu Asp Val Met Lys Glu Leu Ile Thr Leu Ala Lys Cys
290 295 300

His Glu Phe Leu Ile Phe Glu Asp Arg Lys Phe Ala Asp Ile Gly Asn
305 310 315 320

Thr Val Lys Lys Gln Tyr Glu Gly Gly Ile Phe Lys Ile Ala Ser Trp
325 330 335

Ala Asp Leu Val Asn Ala His Val Val Pro Gly Ser Gly Val Val Lys
340 345 350

Gly Leu Gln Glu Val Gly Leu Pro Leu His Arg Gly Cys Leu Leu Ile
355 360 365

Ala Glu Met Ser Ser Thr Gly Ser Leu Ala Thr Gly Asp Tyr Thr Arg
370 375 380

Ala Ala Val Arg Met Ala Glu Glu His Ser Glu Phe Val Val Gly Phe
385 390 395 400

Ile Ser Gly Ser Arg Val Ser Met Lys Pro Glu Phe Leu His Leu Thr
405 410 415

Pro Gly Val Gln Leu Glu Ala Gly Gly Asp Asn Leu Gly Gln Gln Tyr
420 425 430

Asn Ser Pro Gln Glu Val Ile Gly Lys Arg Gly Ser Asp Ile Ile Ile
435 440 445

Val Gly Arg Gly Ile Ile Ser Ala Ala Asp Arg Leu Glu Ala Ala Glu
450 455 460

Met Tyr Arg Lys Ala Ala Trp Glu Ala Tyr Leu Ser Arg Leu Gly Val
465 470 475 480

<210> 234
<211> 86
<212> PRT
<213> Homo sapiens

<400> 234

```
Met Tyr Leu Tyr Leu Ile Ser Ser Cys Ile Lys Pro Ile Asn Leu Cys
1               5                  10                  15

Tyr Cys Ser Ser Asn Leu Met His Thr Val Ile Ser Cys Tyr Ile Cys
            20                  25                  30

Lys Val Gly Asn Cys Phe Leu Ser Tyr Arg Ser Phe Lys Leu His Phe
        35                  40                  45

Cys Ala Val Glu Thr Lys Val Gly Tyr Ser Leu Cys His Val Asp Val
    50                  55                  60

Gln Phe Leu Lys Leu Phe Tyr Lys Thr Leu Ile Ile Lys Pro Leu Asn
65                  70                  75                  80

Leu Lys Lys Lys Lys Lys
                85
```

<210> 235
<211> 54
<212> PRT
<213> Homo sapiens

<400> 235

```
Met Leu Cys Gly Asn Ile Tyr Pro Ile Asp His Pro Ile Leu Met Cys
1               5                  10                  15

Leu Trp Leu Ser Asp Gln Leu Gln Asn Asn Cys Val Val Ile Leu Cys
            20                  25                  30

Pro Lys Leu Leu Ile Asn Phe Tyr Leu Gln Ile Glu Lys Glu Gly Pro
        35                  40                  45

Cys Lys Glu Asn Gly Lys
    50
```

<210> 236
<211> 672
<212> PRT
<213> Homo sapiens

<400> 236

Met Gly Val Gly Arg Leu Asp Met Tyr Val Leu His Pro Pro Ser Ala
1 5 10 15

Gly Ala Glu Arg Thr Leu Ala Ser Val Cys Ala Leu Leu Val Trp His
20 25 30

Pro Ala Gly Pro Gly Glu Lys Val Val Arg Val Leu Phe Pro Gly Cys
35 40 45

Thr Pro Pro Ala Cys Leu Leu Asp Gly Leu Val Arg Leu Gln His Leu
50 55 60

Arg Phe Leu Arg Glu Pro Val Val Thr Pro Gln Asp Leu Glu Gly Pro
65 70 75 80

Gly Arg Ala Glu Ser Lys Glu Ser Val Gly Ser Arg Asp Ser Ser Lys
85 90 95

Arg Glu Gly Leu Leu Ala Thr His Pro Arg Pro Gly Gln Glu Arg Pro
100 105 110

Gly Val Ala Arg Lys Glu Pro Ala Arg Ala Glu Ala Pro Arg Lys Thr
115 120 125

Glu Lys Glu Ala Lys Ala Pro Arg Glu Leu Lys Lys Asp Pro Lys Pro
130 135 140

Ser Val Ser Arg Thr Gln Pro Arg Glu Val Arg Arg Ala Ala Ser Ser

145 150 155 160

Val Pro Asn Leu Lys Lys Thr Asn Ala Gln Ala Ala Pro Lys Pro Arg
165 170 175

Lys Ala Pro Ser Thr Ser His Ser Gly Phe Pro Pro Val Ala Asn Gly
180 185 190

Pro Arg Ser Pro Pro Ser Leu Arg Cys Gly Glu Ala Ser Pro Pro Ser
195 200 205

Ala Ala Cys Gly Ser Pro Ala Ser Gln Leu Val Ala Thr Pro Ser Leu
210 215 220

Glu Leu Gly Pro Ile Pro Ala Gly Glu Glu Lys Ala Leu Glu Leu Pro
225 230 235 240

Leu Ala Ala Ser Ser Ile Pro Arg Pro Arg Thr Pro Ser Pro Glu Ser
245 250 255

His Arg Ser Pro Ala Glu Gly Ser Glu Arg Leu Ser Leu Ser Pro Leu
260 265 270

Arg Gly Gly Glu Ala Gly Pro Asp Ala Ser Pro Thr Val Thr Thr Pro
275 280 285

Thr Val Thr Thr Pro Ser Leu Pro Ala Glu Val Gly Ser Pro His Ser
290 295 300

Thr Glu Val Asp Glu Ser Leu Ser Val Ser Phe Glu Gln Val Leu Pro
305 310 315 320

Pro Ser Ala Pro Thr Ser Glu Ala Gly Leu Ser Leu Pro Leu Arg Gly
325 330 335

Pro Arg Ala Arg Arg Ser Ala Ser Pro His Asp Val Asp Leu Cys Leu
340 345 350

Val Ser Pro Cys Glu Phe Glu His Arg Lys Ala Val Pro Met Ala Pro
355 360 365

Ala Pro Ala Ser Pro Gly Ser Ser Asn Asp Ser Ser Ala Arg Ser Gln
370 375 380

Glu Arg Ala Gly Gly Leu Gly Ala Glu Glu Thr Pro Pro Thr Ser Val
385 390 395 400

Ser Glu Ser Leu Pro Thr Leu Ser Asp Ser Asp Pro Val Pro Leu Ala
405 410 415

Pro Gly Ala Ala Asp Ser Asp Glu Asp Thr Glu Gly Phe Gly Val Pro
420 425 430

Arg His Asp Pro Leu Pro Asp Pro Leu Lys Val Pro Pro Pro Leu Pro
435 440 445

Asp Pro Ser Ser Ile Cys Met Val Asp Pro Glu Met Leu Pro Pro Lys
450 455 460

Thr Ala Arg Gln Thr Glu Asn Val Ser Arg Thr Arg Lys Pro Leu Ala
465 470 475 480

Arg Pro Asn Ser Arg Ala Ala Ala Pro Lys Ala Thr Pro Val Ala Ala
485 490 495

Ala Lys Thr Lys Gly Leu Ala Gly Gly Asp Arg Ala Ser Arg Pro Leu
500 505 510

Ser Ala Arg Ser Glu Pro Ser Glu Lys Gly Gly Arg Ala Pro Leu Ser

515 520 525

Arg Lys Ser Ser Thr Pro Lys Thr Ala Thr Arg Gly Pro Ser Gly Ser
530 535 540

Ala Ser Ser Arg Pro Gly Val Ser Ala Thr Pro Pro Lys Ser Pro Val
545 550 555 560

Tyr Leu Asp Leu Ala Tyr Leu Pro Ser Gly Ser Ser Ala His Leu Val
565 570 575

Asp Glu Glu Phe Phe Gln Arg Val Arg Ala Leu Cys Tyr Val Ile Ser
580 585 590

Gly Gln Asp Gln Arg Lys Glu Glu Gly Met Arg Ala Val Leu Asp Ala
595 600 605

Leu Leu Ala Ser Lys Gln His Trp Asp Arg Asp Leu Gln Val Thr Leu
610 615 620

Ile Pro Thr Phe Asp Ser Val Ala Met His Thr Trp Tyr Ala Glu Thr
625 630 635 640

His Ala Arg His Gln Ala Leu Gly Ile Thr Val Leu Gly Ser Asn Ser
645 650 655

Met Val Ser Met Gln Asp Asp Ala Phe Pro Ala Cys Lys Val Glu Phe
660 665 670

<210> 237
<211> 222
<212> PRT
<213> Homo sapiens

<400> 237

```
Met Asn Ser Asn Val Glu Asn Leu Pro Pro His Ile Ile Arg Leu Val
1               5                  10                  15

Tyr Lys Glu Val Thr Thr Leu Thr Ala Asp Pro Pro Asp Gly Ile Lys
            20                  25                  30

Val Phe Pro Asn Glu Glu Asp Leu Thr Asp Leu Gln Val Thr Ile Glu
        35                  40                  45

Gly Pro Glu Gly Thr Pro Tyr Ala Gly Gly Leu Phe Arg Met Lys Leu
    50                  55                  60

Leu Leu Gly Lys Asp Phe Pro Ala Ser Pro Pro Lys Gly Tyr Phe Leu
65                  70                  75                  80

Thr Lys Ile Phe His Pro Asn Val Gly Ala Asn Gly Glu Ile Cys Val
                85                  90                  95

Asn Val Leu Lys Arg Asp Trp Thr Ala Glu Leu Gly Ile Arg His Val
            100                 105                 110

Leu Leu Thr Ile Lys Cys Leu Leu Ile His Pro Asn Pro Glu Ser Ala
        115                 120                 125

Leu Asn Glu Glu Ala Gly Arg Leu Leu Leu Glu Asn Tyr Glu Glu Tyr
    130                 135                 140

Ala Ala Arg Ala Arg Leu Leu Thr Glu Ile His Gly Gly Ala Gly Gly
145                 150                 155                 160

Pro Ser Gly Arg Ala Glu Ala Gly Arg Ala Leu Ala Ser Gly Thr Glu
                165                 170                 175

Ala Ser Ser Thr Asp Pro Gly Ala Pro Gly Gly Pro Gly Gly Ala Glu
            180                 185                 190
```

Gly Thr Met Ala Lys Lys His Ala Gly Glu Arg Asp Lys Lys Leu Ala
195 200 205

Ala Lys Lys Lys Thr Asp Lys Lys Arg Ala Leu Arg Arg Leu
210 215 220

<210> 238
<211> 245
<212> PRT
<213> Homo sapiens

<400> 238

Met Ala Val Arg Ala Ser Phe Glu Asn Asn Cys Glu Ile Gly Cys Phe
1 5 10 15

Ala Lys Leu Thr Asn Thr Tyr Cys Leu Val Ala Ile Gly Gly Ser Glu
20 25 30

Asn Phe Tyr Ser Val Phe Glu Gly Glu Leu Ser Asp Thr Ile Pro Val
35 40 45

Val His Ala Ser Ile Ala Gly Cys Arg Ile Ile Gly Arg Met Cys Val
50 55 60

Gly Asn Arg His Gly Leu Leu Val Pro Asn Asn Thr Thr Asp Gln Glu
65 70 75 80

Leu Gln His Ile Arg Asn Ser Leu Pro Asp Thr Val Gln Ile Arg Arg
85 90 95

Val Glu Glu Arg Leu Ser Ala Leu Gly Asn Val Thr Thr Cys Asn Asp
100 105 110

Tyr Val Ala Leu Val His Pro Asp Leu Asp Arg Glu Thr Glu Glu Ile

115 120 125

Leu Ala Asp Val Leu Lys Val Glu Val Phe Arg Gln Thr Val Ala Asp
130 135 140

Gln Val Leu Val Gly Ser Tyr Cys Val Phe Ser Asn Gln Gly Gly Leu
145 150 155 160

Val His Pro Lys Thr Ser Ile Glu Asp Gln Asp Glu Leu Ser Ser Leu
165 170 175

Leu Gln Val Pro Leu Val Ala Gly Thr Val Asn Arg Gly Ser Glu Val
180 185 190

Ile Ala Ala Gly Met Val Val Asn Asp Trp Cys Ala Phe Cys Gly Leu
195 200 205

Asp Thr Thr Ser Thr Glu Leu Ser Val Val Glu Ser Val Phe Lys Leu
210 215 220

Asn Glu Ala Gln Pro Ser Thr Ile Ala Thr Ser Met Arg Asp Ser Leu
225 230 235 240

Ile Asp Ser Leu Thr
245

<210> 239
<211> 117
<212> PRT
<213> Homo sapiens

<400> 239

Met Glu Ser Gly Ala Lys Gly Cys Glu Val Val Val Ser Gly Lys Leu
1 5 10 15

Arg Gly Gln Arg Ala Lys Ser Met Lys Phe Val Asp Gly Leu Met Ile
20 25 30

His Ser Gly Asp Pro Val Asn Tyr Tyr Val Asp Thr Ala Val Arg His
35 40 45

Val Leu Leu Arg Gln Gly Val Leu Gly Ile Lys Val Lys Ile Met Leu
50 55 60

Pro Trp Asp Pro Thr Gly Lys Ile Gly Pro Lys Lys Pro Leu Pro Asp
65 70 75 80

His Val Ser Ile Val Glu Pro Lys Asp Glu Ile Leu Pro Thr Thr Pro
85 90 95

Ile Ser Glu Gln Lys Gly Gly Lys Pro Glu Pro Pro Ala Met Pro Gln
100 105 110

Pro Val Pro Thr Ala
115

<210> 240
<211> 444
<212> PRT
<213> Homo sapiens

<400> 240

Met Arg Glu Ile Val His Ile Gln Ala Gly Gln Cys Gly Asn Gln Ile
1 5 10 15

Gly Ala Lys Phe Trp Glu Val Ile Ser Asp Glu His Gly Ile Asp Pro
20 25 30

Thr Gly Thr Tyr His Gly Asp Ser Asp Leu Gln Leu Asp Arg Ile Ser
35 40 45

Val Tyr Tyr Asn Glu Ala Thr Gly Gly Lys Tyr Val Pro Arg Ala Ile
50 55 60

Leu Val Asp Leu Glu Pro Gly Thr Met Asp Ser Val Arg Ser Gly Pro
65 70 75 80

Phe Gly Gln Ile Phe Arg Pro Asp Asn Phe Val Phe Gly Gln Ser Gly
85 90 95

Ala Gly Asn Asn Trp Ala Lys Gly His Tyr Thr Glu Gly Ala Glu Leu
100 105 110

Val Asp Ser Val Leu Asp Val Val Arg Lys Glu Ala Glu Ser Cys Asp
115 120 125

Cys Leu Gln Gly Phe Gln Leu Thr His Ser Leu Gly Gly Gly Thr Gly
130 135 140

Ser Gly Met Gly Thr Leu Leu Ile Ser Lys Ile Arg Glu Glu Tyr Pro
145 150 155 160

Asp Arg Ile Met Asn Thr Phe Ser Val Val Pro Ser Pro Lys Val Ser
165 170 175

Asp Thr Val Val Glu Pro Tyr Asn Ala Thr Leu Ser Val His Gln Leu
180 185 190

Val Glu Asn Thr Asp Glu Thr Tyr Cys Ile Asp Asn Glu Ala Leu Tyr
195 200 205

Asp Ile Cys Phe Arg Thr Leu Lys Leu Thr Thr Pro Thr Tyr Gly Asp
210 215 220

Leu Asn His Leu Val Ser Ala Thr Met Ser Gly Val Thr Thr Cys Leu

225 230 235 240

Arg Phe Pro Gly Gln Leu Asn Ala Asp Leu Arg Lys Leu Ala Val Asn
245 250 255

Met Val Pro Phe Pro Arg Leu His Phe Phe Met Pro Gly Phe Ala Pro
260 265 270

Leu Thr Ser Arg Gly Ser Gln Gln Tyr Arg Ala Leu Thr Val Pro Glu
275 280 285

Leu Thr Gln Gln Val Phe Asp Ala Lys Asn Met Met Ala Ala Cys Asp
290 295 300

Pro Arg His Gly Arg Tyr Leu Thr Val Ala Ala Val Phe Arg Gly Arg
305 310 315 320

Met Ser Met Lys Glu Val Asp Glu Gln Met Leu Asn Val Gln Asn Lys
325 330 335

Asn Ser Ser Tyr Phe Val Glu Trp Ile Pro Asn Asn Val Lys Thr Ala
340 345 350

Val Cys Asp Ile Pro Pro Arg Gly Leu Lys Met Ala Val Thr Phe Ile
355 360 365

Gly Asn Ser Thr Ala Ile Gln Glu Leu Phe Lys Arg Ile Ser Glu Gln
370 375 380

Phe Thr Ala Met Phe Arg Arg Lys Ala Phe Leu His Trp Tyr Thr Gly
385 390 395 400

Glu Gly Met Asp Glu Met Glu Phe Thr Glu Ala Glu Ser Asn Met Asn
405 410 415

Asp Leu Val Ser Glu Tyr Gln Gln Tyr Gln Asp Ala Thr Ala Glu Glu
420 425 430

Glu Glu Asp Phe Gly Glu Glu Ala Glu Glu Glu Ala
435 440

<210> 241
<211> 92
<212> PRT
<213> Homo sapiens

<400> 241

Met Asp Glu Gln Ile Arg Leu Met Asp Gln Asn Leu Lys Cys Leu Ser
1 5 10 15

Ala Ala Glu Glu Lys Tyr Ser Gln Lys Glu Asp Lys Tyr Glu Glu Glu
20 25 30

Ile Lys Ile Leu Thr Asp Lys Leu Lys Glu Ala Glu Thr Arg Ala Glu
35 40 45

Phe Ala Glu Arg Ser Val Ala Lys Leu Glu Lys Thr Ile Asp Asp Leu
50 55 60

Glu Asp Lys Leu Lys Cys Thr Lys Glu Glu His Leu Cys Thr Gln Arg
65 70 75 80

Met Leu Asp Gln Thr Leu Leu Asp Leu Asn Glu Met
85 90

<210> 242
<211> 453
<212> PRT
<213> Homo sapiens

<400> 242

```
Met Val Met Gly Ile Thr Asp Val Asp Asp Lys Ile Ile Lys Arg Ala
1               5                  10                  15

Asn Glu Met Asn Ile Ser Pro Ala Ser Leu Ala Ser Leu Tyr Glu Glu
            20                  25                  30

Asp Phe Lys Gln Asp Met Ala Ala Leu Lys Val Leu Pro Pro Thr Val
        35                  40                  45

Tyr Leu Arg Val Thr Glu Asn Ile Pro Gln Ile Ile Ser Phe Ile Glu
    50                  55                  60

Gly Ile Ile Ala Ser Trp Glu Arg Leu Phe Asn Gly Lys Arg Gln Cys
65                  70                  75                  80

Leu Leu Arg Ser Glu Ser Leu Glu Glu Thr Lys Tyr Gly Lys Ile Gly
                85                  90                  95

Arg Arg Gly Pro Trp Ser Ser Pro Glu Thr Ser Gly Leu Leu Thr Ser
            100                 105                 110

Arg His Ala Asn Asp Phe Ala Leu Trp Lys Ala Ala Lys Pro Gln Glu
        115                 120                 125

Val Phe Trp Ala Ser Pro Trp Gly Pro Gly Arg Pro Gly Trp His Ile
    130                 135                 140

Glu Cys Ser Ala Ile Ala Ser Met Val Phe Gly Ser Gln Leu Asp Ile
145                 150                 155                 160

His Ser Gly Gly Ile Asp Leu Ala Phe Pro His His Glu Asn Glu Ile
                165                 170                 175

Ala Gln Cys Glu Val Phe His Gln Cys Glu Gln Trp Gly Asn Tyr Phe
```

180 185 190

Leu His Ser Gly His Leu His Ala Lys Gly Lys Glu Glu Lys Met Ser
195 200 205

Lys Ser Leu Lys Asn Tyr Ile Thr Ile Lys Asp Phe Leu Lys Thr Phe
210 215 220

Ser Pro Asp Val Phe Arg Phe Phe Cys Leu Arg Ser Ser Tyr Arg Ser
225 230 235 240

Ala Ile Asp Tyr Ser Asp Ser Ala Met Leu Gln Ala Gln Gln Leu Leu
245 250 255

Leu Gly Leu Gly Ser Phe Leu Glu Asp Ala Arg Ala Tyr Met Lys Gly
260 265 270

Gln Leu Ala Cys Gly Ser Val Arg Glu Ala Met Leu Trp Glu Arg Leu
275 280 285

Ser Ser Thr Lys Arg Ala Val Lys Ala Ala Leu Ala Asp Asp Phe Asp
290 295 300

Thr Pro Arg Val Val Asp Ala Ile Leu Gly Leu Ala His His Gly Asn
305 310 315 320

Gly Gln Leu Arg Ala Ser Leu Lys Glu Pro Glu Gly Pro Arg Ser Pro
325 330 335

Ala Val Phe Gly Ala Ile Ile Ser Tyr Phe Glu Gln Phe Phe Glu Thr
340 345 350

Val Gly Ile Ser Leu Ala Asn Gln Gln Tyr Val Ser Gly Asp Gly Ser
355 360 365

Glu Ala Thr Leu His Gly Val Val Asp Glu Leu Val Arg Phe Arg Gln
370 375 380

Lys Val Arg Gln Phe Ala Leu Ala Met Pro Glu Ala Thr Gly Asp Ala
385 390 395 400

Arg Arg Gln Gln Leu Leu Glu Arg Gln Pro Leu Leu Glu Ala Cys Asp
405 410 415

Thr Leu Arg Arg Gly Leu Thr Ala His Gly Ile Asn Ile Lys Asp Arg
420 425 430

Ser Ser Thr Thr Ser Thr Trp Glu Leu Leu Asp Gln Arg Thr Lys Asp
435 440 445

Gln Lys Ser Ala Gly
450

<210> 243
<211> 209
<212> PRT
<213> Homo sapiens

<400> 243

Met Lys Glu Leu Ala Glu Glu Glu Pro His Leu Val Glu Gln Phe Gln
1 5 10 15

Lys Leu Ser Glu Ala Ala Gly Arg Val Gly Ser Asp Met Thr Ser Gln
20 25 30

Gln Glu Phe Thr Ser Cys Leu Lys Glu Thr Leu Ser Gly Leu Ala Lys
35 40 45

Asn Ala Thr Asp Leu Gln Asn Ser Ser Met Ser Glu Glu Glu Leu Thr
50 55 60

Lys Ala Met Glu Gly Leu Gly Met Asp Glu Gly Asp Gly Glu Gly Asn
65 70 75 80

Ile Leu Pro Ile Met Gln Ser Ile Met Gln Asn Leu Leu Ser Lys Asp
85 90 95

Val Leu Tyr Pro Ser Leu Lys Glu Ile Thr Glu Lys Tyr Pro Glu Trp
100 105 110

Leu Gln Ser His Arg Glu Ser Leu Pro Pro Glu Gln Phe Glu Lys Tyr
115 120 125

Gln Glu Gln His Ser Val Met Cys Lys Ile Cys Glu Gln Phe Glu Ala
130 135 140

Glu Thr Pro Thr Asp Ser Glu Thr Thr Gln Lys Ala Arg Phe Glu Met
145 150 155 160

Val Leu Asp Leu Met Gln Gln Leu Gln Asp Leu Gly His Pro Pro Lys
165 170 175

Glu Leu Ala Gly Glu Met Pro Pro Gly Leu Asn Phe Asp Leu Asp Ala
180 185 190

Leu Asn Leu Ser Gly Pro Pro Gly Ala Ser Gly Glu Gln Cys Leu Ile
195 200 205

Met

<210> 244
<211> 354
<212> PRT
<213> Homo sapiens

<400> 244

```
Met Arg Arg Leu Met Ser Ser Arg Asp Trp Pro Arg Thr Arg Thr Gly
1               5                  10                  15

Thr Gly Ile Leu Ser Ser Gln Pro Glu Glu Asn Pro Tyr Trp Trp Asn
            20                  25                  30

Ala Asn Met Val Phe Ile Pro Tyr Cys Ser Ser Asp Val Trp Ser Gly
        35                  40                  45

Ala Ser Ser Lys Ser Glu Lys Asn Glu Tyr Ala Phe Met Gly Ala Leu
    50                  55                  60

Ile Ile Gln Glu Val Val Arg Glu Leu Leu Gly Arg Gly Leu Ser Gly
65                  70                  75                  80

Ala Lys Val Leu Leu Leu Ala Gly Ser Ser Ala Gly Gly Thr Gly Val
                85                  90                  95

Leu Leu Asn Val Asp Arg Val Ala Glu Gln Leu Glu Lys Leu Gly Tyr
            100                 105                 110

Pro Ala Ile Gln Val Arg Gly Leu Ala Asp Ser Gly Trp Phe Leu Asp
        115                 120                 125

Asn Lys Gln Tyr Arg His Thr Asp Cys Val Asp Thr Ile Thr Cys Ala
    130                 135                 140

Pro Thr Glu Ala Ile Arg Arg Gly Ile Arg Tyr Trp Asn Gly Val Val
145                 150                 155                 160

Pro Glu Arg Cys Arg Arg Gln Phe Gln Glu Gly Glu Glu Trp Asn Cys
                165                 170                 175
```

Phe Phe Gly Tyr Lys Val Tyr Pro Thr Leu Arg Cys Pro Val Phe Val
180 185 190

Val Gln Trp Leu Phe Asp Glu Ala Gln Leu Thr Val Asp Asn Val His
195 200 205

Leu Thr Gly Gln Pro Val Gln Glu Gly Leu Arg Leu Tyr Ile Gln Asn
210 215 220

Leu Gly Arg Glu Leu Arg His Thr Leu Lys Asp Val Pro Ala Ser Phe
225 230 235 240

Ala Pro Ala Cys Leu Ser His Glu Ile Ile Ile Arg Ser His Trp Thr
245 250 255

Asp Val Gln Val Lys Gly Thr Ser Leu Pro Arg Ala Leu His Cys Trp
260 265 270

Asp Arg Ser Leu His Asp Ser His Lys Ala Ser Lys Thr Pro Leu Lys
275 280 285

Gly Cys Pro Val His Leu Val Asp Ser Cys Pro Trp Pro His Cys Asn
290 295 300

Pro Ser Cys Pro Thr Val Arg Asp Gln Phe Thr Gly Gln Glu Met Asn
305 310 315 320

Val Ala Gln Phe Leu Met His Met Gly Phe Asp Met Gln Thr Val Ala
325 330 335

Gln Pro Gln Gly Leu Glu Pro Ser Glu Leu Leu Gly Met Leu Ser Asn
340 345 350

Gly Ser

<210> 245
<211> 295
<212> PRT
<213> Homo sapiens

<400> 245

Met Glu Leu Ile Gln Asp Thr Ser Arg Pro Pro Leu Glu Tyr Val Lys
1 5 10 15

Gly Val Pro Leu Ile Lys Tyr Phe Ala Glu Ala Leu Gly Pro Leu Gln
20 25 30

Ser Phe Gln Ala Arg Pro Asp Asp Leu Leu Ile Ser Thr Tyr Pro Lys
35 40 45

Ser Gly Thr Thr Trp Val Ser Gln Ile Leu Asp Met Ile Tyr Gln Gly
50 55 60

Gly Asp Leu Glu Lys Cys His Arg Ala Pro Ile Phe Met Arg Val Pro
65 70 75 80

Phe Leu Glu Phe Lys Ala Pro Gly Ile Pro Ser Gly Met Glu Thr Leu
85 90 95

Lys Asp Thr Pro Ala Pro Arg Leu Leu Lys Thr His Leu Pro Leu Ala
100 105 110

Leu Leu Pro Gln Thr Leu Leu Asp Gln Lys Val Lys Val Val Tyr Val
115 120 125

Ala Arg Asn Ala Lys Asp Val Ala Val Ser Tyr Tyr His Phe Tyr His
130 135 140

```
Met Ala Lys Val His Pro Glu Pro Gly Thr Trp Asp Ser Phe Leu Glu
145                 150                 155                 160

Lys Phe Met Val Gly Glu Val Ser Tyr Gly Ser Trp Tyr Gln His Val
                165                 170                 175

Gln Glu Trp Trp Glu Leu Ser Arg Thr His Pro Val Leu Tyr Leu Phe
            180                 185                 190

Tyr Glu Asp Met Lys Glu Asn Pro Lys Arg Glu Ile Gln Lys Ile Leu
        195                 200                 205

Glu Phe Val Gly His Ser Leu Pro Glu Glu Thr Val Asp Phe Met Val
    210                 215                 220

Gln His Thr Ser Phe Lys Glu Met Lys Lys Asn Pro Met Thr Asn Tyr
225                 230                 235                 240

Thr Thr Val Pro Gln Glu Phe Met Asp His Ser Ile Ser Pro Phe Met
                245                 250                 255

Arg Lys Gly Met Ala Gly Asp Trp Lys Thr Thr Phe Thr Val Ala Gln
            260                 265                 270

Asn Glu Arg Phe Asp Ala Asp Tyr Ala Glu Lys Met Ala Gly Cys Ser
        275                 280                 285

Leu Ser Phe Arg Ser Glu Leu
    290                 295
```

<210> 246
<211> 439
<212> PRT
<213> Homo sapiens

<400> 246

```
Met Glu Pro Ser Thr Ala Ala Arg Ala Trp Ala Leu Phe Trp Leu Leu
1               5                  10                  15

Leu Pro Leu Leu Gly Ala Val Cys Ala Ser Gly Pro Arg Thr Leu Val
            20                  25                  30

Leu Leu Asp Asn Leu Asn Val Arg Glu Thr His Ser Leu Phe Phe Arg
        35                  40                  45

Ser Leu Lys Asp Arg Gly Phe Glu Leu Thr Phe Lys Thr Ala Asp Asp
    50                  55                  60

Pro Ser Leu Ser Leu Ile Lys Tyr Gly Glu Phe Leu Tyr Asp Asn Leu
65                  70                  75                  80

Ile Ile Phe Ser Pro Ser Val Glu Asp Phe Gly Gly Asn Ile Asn Val
                85                  90                  95

Glu Thr Ile Ser Ala Phe Ile Asp Gly Gly Gly Ser Val Leu Val Ala
            100                 105                 110

Ala Ser Ser Asp Ile Gly Asp Pro Leu Arg Glu Leu Gly Ser Glu Cys
        115                 120                 125

Gly Ile Glu Phe Asp Glu Glu Lys Thr Ala Val Ile Asp His His Asn
    130                 135                 140

Tyr Asp Ile Ser Asp Leu Gly Gln His Thr Leu Ile Val Ala Asp Thr
145                 150                 155                 160

Glu Asn Leu Leu Lys Ala Pro Thr Ile Val Gly Lys Ser Ser Leu Asn
                165                 170                 175

Pro Ile Leu Phe Arg Gly Val Gly Met Val Ala Asp Pro Asp Asn Pro
```

180 185 190

Leu Val Leu Asp Ile Leu Thr Gly Ser Ser Thr Ser Tyr Ser Phe Phe
195 200 205

Pro Asp Lys Pro Ile Thr Gln Tyr Pro His Ala Val Gly Lys Asn Thr
210 215 220

Leu Leu Ile Ala Gly Leu Gln Ala Arg Asn Asn Ala Arg Val Ile Phe
225 230 235 240

Ser Gly Ser Leu Asp Phe Phe Ser Asp Ser Phe Phe Asn Ser Ala Val
245 250 255

Gln Lys Ala Ala Pro Gly Ser Gln Arg Tyr Ser Gln Thr Gly Asn Tyr
260 265 270

Glu Leu Ala Val Ala Leu Ser Arg Trp Val Phe Lys Glu Glu Gly Val
275 280 285

Leu Arg Val Gly Pro Val Ser His His Arg Val Gly Glu Thr Ala Pro
290 295 300

Pro Asn Ala Tyr Thr Val Thr Asp Leu Val Glu Tyr Ser Ile Val Ile
305 310 315 320

Gln Gln Leu Ser Asn Gly Lys Trp Val Pro Phe Asp Gly Asp Asp Ile
325 330 335

Gln Leu Glu Phe Val Arg Ile Asp Pro Phe Val Arg Thr Phe Leu Lys
340 345 350

Lys Lys Gly Gly Lys Tyr Ser Val Gln Phe Lys Leu Pro Asp Val Tyr
355 360 365

```
Gly Val Phe Gln Phe Lys Val Asp Tyr Asn Arg Leu Gly Tyr Thr His
    370                 375                 380

Leu Tyr Ser Ser Thr Gln Val Ser Val Arg Pro Leu Gln His Thr Gln
385                 390                 395                 400

Tyr Glu Arg Phe Ile Pro Ser Ala Tyr Pro Tyr Tyr Ala Ser Ala Phe
                405                 410                 415

Ser Met Met Leu Gly Leu Phe Ile Phe Ser Ile Val Phe Leu His Met
            420                 425                 430

Lys Glu Lys Glu Lys Ser Asp
        435
```

<210> 247
<211> 56
<212> PRT
<213> Homo sapiens

<400> 247

```
Met Glu Thr Leu His Thr Trp Gly Ser Lys Val Leu Gly Tyr Ser Trp
1               5                   10                  15

Ile Phe Arg Thr Ser Ala Tyr Pro Gln Val Ser Gln Ala Ser Gly Gly
            20                  25                  30

Glu Ala Ser Asp Pro Trp Pro Thr Cys Tyr Pro Pro Gln Gly Leu Asp
        35                  40                  45

Leu Ser Ser Arg Glu Gly Thr Glu
    50                  55
```

<210> 248
<211> 46

<212> PRT
<213> Homo sapiens

<400> 248

Met Gly Phe Lys Gly Pro Gly Val Phe Leu Asp Leu Gln Asp Ile Cys
1 5 10 15

Leu Pro Ser Gly Phe Pro Gly Leu Gly Trp Gly Gly Ile Arg Ser Leu
20 25 30

Ala Asn Leu Leu Ser Thr Pro Gly Phe Arg Pro Leu Phe Pro
35 40 45

<210> 249
<211> 61
<212> PRT
<213> Homo sapiens

<400> 249

Ile Gly Thr Val Phe Leu Glu Gly Asn Leu Val Lys Cys Ile Lys Arg
1 5 10 15

Leu Lys Asn Thr Asp Val Leu Cys Ala Gly Asn Ser Thr Ser Ser Asn
20 25 30

Phe Ser Leu Lys Pro Tyr Gln Arg Cys Ile Gln Arg Ile Ile Tyr Lys
35 40 45

Glu Gly Cys Leu Ile Met Ile Val Ile Ile Ile Asn Asn
50 55 60

<210> 250
<211> 73
<212> PRT
<213> Homo sapiens

<400> 250

```
Met Phe Asp Ser Pro Phe Tyr Glu Leu Asn Tyr Phe Ile Arg Val Gly
1               5                   10                  15

Asn Phe Cys Phe Leu Ile Lys Trp Lys Leu Ala Phe Leu Thr Leu Phe
            20                  25                  30

Leu Leu Leu Phe Tyr Arg Asn Ala Phe Cys Trp Pro Gly Thr Val Ala
        35                  40                  45

His Pro Cys Asn Pro Ser Thr Val Gly Gly Arg Asp Gly Trp Ile Thr
    50                  55                  60

Arg Ser Gly Asp Arg Asp His Pro Gly
65                  70
```

<210> 251
<211> 43
<212> PRT
<213> Homo sapiens

<400> 251

```
Met Leu Phe Val Gly Arg Ala Gln Leu Leu Ile His Val Ile Pro Ala
1               5                   10                  15

Leu Trp Glu Ala Glu Thr Gly Gly Ser Gln Gly Gln Glu Ile Glu Thr
            20                  25                  30

Ile Leu Ala Asn Ala Leu Lys Leu Arg Leu Cys
        35                  40
```

<210> 252
<211> 30
<212> PRT
<213> Homo sapiens

<400> 252

Met Tyr Ile Phe Phe Cys Val Leu Phe Leu Leu Leu Leu Phe Glu
1 5 10 15

Thr Gly Ser Cys Ser Val Ala Gln Ala Gly Val Gln Trp His
20 25 30

<210> 253
<211> 87
<212> PRT
<213> Homo sapiens

<400> 253

Met Asn Cys Asn Thr Gln Ser Gln Thr Arg Ala Leu Pro Arg Pro Leu
1 5 10 15

Gly Gly Cys Thr Pro Ser Ser Ser Ala Arg Leu Arg Ser Leu Arg Pro
20 25 30

Arg Leu Lys Glu Gly Val Ala Gly Asn Pro Gly Asn Leu Ser Glu Val
35 40 45

Thr Pro His Pro Tyr Thr Pro Ser Val His Pro Arg Leu Phe Leu Leu
50 55 60

Leu Phe Gly Phe Trp Lys Gly Ile His Leu Gln Ala Ala His Pro Gly
65 70 75 80

Gly Ala Cys Phe Leu Lys Pro
85

<210> 254
<211> 211
<212> PRT
<213> Homo sapiens

<400> 254

Met Ala Pro Ser Arg Asn Gly Met Val Leu Lys Pro His Phe His Lys
1 5 10 15

Asp Trp Gln Arg Arg Val Ala Thr Trp Phe Asn Gln Pro Ala Arg Lys
20 25 30

Ile Arg Arg Arg Lys Ala Arg Gln Ala Lys Ala Arg Arg Ile Ala Pro
35 40 45

Arg Pro Ala Ser Gly Pro Ile Arg Pro Ile Val Arg Cys Pro Thr Val
50 55 60

Arg Tyr His Thr Lys Val Arg Ala Gly Arg Gly Phe Ser Leu Glu Glu
65 70 75 80

Leu Arg Val Ala Gly Ile His Lys Lys Val Ala Arg Thr Ile Gly Ile
85 90 95

Ser Val Asp Pro Arg Arg Arg Asn Lys Ser Thr Glu Ser Leu Gln Ala
100 105 110

Asn Val Gln Arg Leu Lys Glu Tyr Arg Ser Lys Leu Ile Leu Phe Pro
115 120 125

Arg Lys Pro Ser Ala Pro Lys Lys Gly Asp Ser Ser Ala Glu Glu Leu
130 135 140

Lys Leu Ala Thr Gln Leu Thr Gly Pro Val Met Pro Val Arg Asn Val
145 150 155 160

Tyr Lys Lys Glu Lys Ala Arg Val Ile Thr Glu Glu Glu Lys Asn Phe
165 170 175

Lys Ala Phe Ala Ser Leu Arg Met Ala Arg Ala Asn Ala Arg Leu Phe

180 185 190

Gly Ile Arg Ala Lys Arg Ala Lys Glu Ala Ala Glu Gln Asp Val Glu
195 200 205

Lys Lys Lys
210

<210> 255
<211> 417
<212> PRT
<213> Homo sapiens

<400> 255

Met Ser Leu Ser Asn Lys Leu Thr Leu Asp Lys Leu Asp Val Lys Gly
1 5 10 15

Lys Arg Val Val Met Arg Val Asp Phe Asn Val Pro Met Lys Asn Asn
20 25 30

Gln Ile Thr Asn Asn Gln Arg Ile Lys Ala Ala Val Pro Ser Ile Lys
35 40 45

Phe Cys Leu Asp Asn Gly Ala Lys Ser Val Val Leu Met Ser His Leu
50 55 60

Gly Arg Pro Asp Gly Val Pro Met Pro Asp Lys Tyr Ser Leu Glu Pro
65 70 75 80

Val Ala Val Glu Leu Lys Ser Leu Leu Gly Lys Asp Val Leu Phe Leu
85 90 95

Lys Asp Cys Val Gly Pro Glu Val Glu Lys Ala Cys Ala Asn Pro Ala
100 105 110

```
Ala Gly Ser Val Ile Leu Leu Glu Asn Leu Arg Phe His Val Glu Glu
        115                 120                 125

Glu Gly Lys Gly Lys Asp Ala Ser Gly Asn Lys Val Lys Ala Glu Pro
    130                 135                 140

Ala Lys Ile Glu Ala Phe Arg Ala Ser Leu Ser Lys Leu Gly Asp Val
145                 150                 155                 160

Tyr Val Asn Asp Ala Phe Gly Thr Ala His Arg Ala His Ser Ser Met
                165                 170                 175

Val Gly Val Asn Leu Pro Gln Lys Ala Gly Gly Phe Leu Met Lys Lys
            180                 185                 190

Glu Leu Asn Tyr Phe Ala Lys Ala Leu Glu Ser Pro Glu Arg Pro Phe
        195                 200                 205

Leu Ala Ile Leu Gly Gly Ala Lys Val Ala Asp Lys Ile Gln Leu Ile
    210                 215                 220

Asn Asn Met Leu Asp Lys Val Asn Glu Met Ile Ile Gly Gly Gly Met
225                 230                 235                 240

Ala Phe Thr Phe Leu Lys Val Leu Asn Asn Met Glu Ile Gly Thr Ser
                245                 250                 255

Leu Phe Asp Glu Glu Gly Ala Lys Ile Val Lys Asp Leu Met Ser Lys
            260                 265                 270

Ala Glu Lys Asn Gly Val Lys Ile Thr Leu Pro Val Asp Phe Val Thr
        275                 280                 285

Ala Asp Lys Phe Asp Glu Asn Ala Lys Thr Gly Gln Ala Thr Val Ala
    290                 295                 300
```

Ser Gly Ile Pro Ala Gly Trp Met Gly Leu Asp Cys Gly Pro Glu Ser
305 310 315 320

Ser Lys Lys Tyr Ala Glu Ala Val Thr Arg Ala Lys Gln Ile Val Trp
325 330 335

Asn Gly Pro Val Gly Val Phe Glu Trp Glu Ala Phe Ala Arg Gly Thr
340 345 350

Lys Ala Leu Met Asp Glu Val Val Lys Ala Thr Ser Arg Gly Cys Ile
355 360 365

Thr Ile Ile Gly Gly Gly Asp Thr Ala Thr Cys Cys Ala Lys Trp Asn
370 375 380

Thr Glu Asp Lys Val Ser His Val Ser Thr Gly Gly Gly Ala Ser Leu
385 390 395 400

Glu Leu Leu Glu Gly Lys Val Leu Pro Gly Val Asp Ala Leu Ser Asn
405 410 415

Ile

<210> 256
<211> 568
<212> PRT
<213> Homo sapiens

<400> 256

Met Val Leu Gly Pro Glu Gln Lys Met Ser Asp Asp Ser Val Ser Gly
1 5 10 15

Asp His Gly Glu Ser Ala Ser Leu Gly Asn Ile Asn Pro Ala Tyr Ser

20 25 30

Asn Pro Ser Leu Ser Gln Ser Pro Gly Asp Ser Glu Glu Tyr Phe Ala
35 40 45

Thr Tyr Phe Asn Glu Lys Ile Ser Ile Pro Glu Glu Glu Tyr Ser Cys
50 55 60

Phe Ser Phe Arg Lys Leu Trp Ala Phe Thr Gly Pro Gly Phe Leu Met
65 70 75 80

Ser Ile Ala Tyr Leu Asp Pro Gly Asn Ile Glu Ser Asp Leu Gln Ser
85 90 95

Gly Ala Val Ala Gly Phe Lys Leu Leu Trp Ile Leu Leu Leu Ala Thr
100 105 110

Leu Val Gly Leu Leu Leu Gln Arg Leu Ala Ala Arg Leu Gly Val Val
115 120 125

Thr Gly Leu His Leu Ala Glu Val Cys His Arg Gln Tyr Pro Lys Val
130 135 140

Pro Arg Val Ile Leu Trp Leu Met Val Glu Leu Ala Ile Ile Gly Ser
145 150 155 160

Asp Met Gln Glu Val Ile Gly Ser Ala Ile Ala Ile Asn Leu Leu Ser
165 170 175

Val Gly Arg Ile Pro Leu Trp Gly Gly Val Leu Ile Thr Ile Ala Asp
180 185 190

Thr Phe Val Phe Leu Phe Leu Asp Lys Tyr Gly Leu Arg Lys Leu Glu
195 200 205

```
Ala Phe Phe Gly Phe Leu Ile Thr Ile Met Ala Leu Thr Phe Gly Tyr
    210                 215                 220

Glu Tyr Val Thr Val Lys Pro Ser Gln Ser Gln Val Leu Lys Gly Met
225                 230                 235                 240

Phe Val Pro Ser Cys Ser Gly Cys Arg Thr Pro Gln Ile Glu Gln Ala
                245                 250                 255

Val Gly Ile Val Gly Ala Val Ile Met Pro His Asn Met Tyr Leu His
            260                 265                 270

Ser Ala Leu Val Lys Ser Arg Gln Val Asn Arg Asn Asn Lys Gln Glu
        275                 280                 285

Val Arg Glu Ala Asn Lys Tyr Phe Phe Ile Glu Ser Cys Ile Ala Leu
    290                 295                 300

Phe Val Ser Phe Ile Ile Asn Val Phe Val Val Ser Val Phe Ala Glu
305                 310                 315                 320

Ala Phe Phe Gly Lys Thr Asn Glu Gln Val Val Glu Val Cys Thr Asn
                325                 330                 335

Thr Ser Ser Pro His Ala Gly Leu Phe Pro Lys Asp Asn Ser Thr Leu
            340                 345                 350

Ala Val Asp Ile Tyr Lys Gly Gly Val Val Leu Gly Cys Tyr Phe Gly
        355                 360                 365

Pro Ala Ala Leu Tyr Ile Trp Ala Val Gly Ile Leu Ala Ala Gly Gln
    370                 375                 380

Ser Ser Thr Met Thr Gly Thr Tyr Ser Gly Gln Phe Val Met Glu Gly
```

385 390 395 400

Phe Leu Asn Leu Lys Trp Ser Arg Phe Ala Arg Val Val Leu Thr Arg
405 410 415

Ser Ile Ala Ile Ile Pro Thr Leu Leu Val Ala Val Phe Gln Asp Val
420 425 430

Glu His Leu Thr Gly Met Asn Asp Phe Leu Asn Val Leu Gln Ser Leu
435 440 445

Gln Leu Pro Phe Ala Leu Ile Pro Ile Leu Thr Phe Thr Ser Leu Arg
450 455 460

Pro Val Met Ser Asp Phe Ala Asn Gly Leu Gly Trp Arg Ile Ala Gly
465 470 475 480

Gly Ile Leu Val Leu Ile Ile Cys Ser Ile Asn Met Tyr Phe Val Val
485 490 495

Val Tyr Val Arg Asp Leu Gly His Val Ala Leu Tyr Val Val Ala Ala
500 505 510

Val Val Ser Val Ala Tyr Leu Gly Phe Val Phe Tyr Leu Gly Trp Gln
515 520 525

Cys Leu Ile Ala Leu Gly Met Ser Phe Leu Asp Cys Gly His Thr Cys
530 535 540

His Leu Gly Leu Thr Ala Gln Pro Glu Leu Tyr Leu Leu Asn Thr Met
545 550 555 560

Asp Ala Asp Ser Leu Val Ser Arg
565

<210> 257
<211> 46
<212> PRT
<213> Homo sapiens

<400> 257

Met Leu Phe Ile His Ala Glu Val Ile Gln Phe Pro Pro Ser Tyr Arg
1 5 10 15

Ser Ile Leu Ile His Pro Thr Leu Glu Met Gln His Leu Cys Gly Arg
20 25 30

Leu Phe His Lys Pro Pro Arg Leu Leu Arg Leu Gly Arg Tyr
35 40 45

<210> 258
<211> 36
<212> PRT
<213> Homo sapiens

<400> 258

Met Ala Ser Leu Gln Phe Val Ile Ser Leu Pro Val Cys Ser Leu Lys
1 5 10 15

Leu Ile Lys Arg Ser Gly Tyr Ile Glu Leu Leu Tyr Arg Cys Glu Gly
20 25 30

Met Asp Lys Ser
35

<210> 259
<211> 898
<212> PRT
<213> Homo sapiens

<400> 259

```
Met Ser Val Thr Glu Glu Asp Leu Cys His His Met Lys Val Val Val
1               5                  10                  15

Arg Val Arg Pro Glu Asn Thr Lys Glu Lys Ala Ala Gly Phe His Lys
            20                  25                  30

Val Val His Val Val Asp Lys His Ile Leu Val Phe Asp Pro Lys Gln
        35                  40                  45

Glu Glu Val Ser Phe Phe His Gly Lys Lys Thr Thr Asn Gln Asn Val
    50                  55                  60

Ile Lys Lys Gln Asn Lys Asp Leu Lys Phe Val Phe Asp Ala Val Phe
65                  70                  75                  80

Asp Glu Thr Ser Thr Gln Ser Glu Val Phe Glu His Thr Thr Lys Pro
                85                  90                  95

Ile Leu Arg Ser Phe Leu Asn Gly Tyr Asn Cys Thr Val Leu Ala Tyr
            100                 105                 110

Gly Ala Thr Gly Ala Gly Lys Thr His Thr Met Leu Gly Ser Ala Asp
        115                 120                 125

Glu Pro Gly Val Met Tyr Leu Thr Met Leu His Leu Tyr Lys Cys Met
    130                 135                 140

Asp Glu Ile Lys Glu Glu Lys Ile Cys Ser Thr Ala Val Ser Tyr Leu
145                 150                 155                 160

Glu Val Tyr Asn Glu Gln Ile Arg Asp Leu Leu Val Asn Ser Gly Pro
                165                 170                 175

Leu Ala Val Arg Glu Asp Thr Gln Lys Gly Val Val Val His Gly Leu
            180                 185                 190
```

Thr Leu His Gln Pro Lys Ser Ser Glu Glu Ile Leu His Leu Leu Asp
195 200 205

Asn Gly Asn Lys Asn Arg Thr Gln His Pro Thr Asp Met Asn Ala Thr
210 215 220

Ser Ser Arg Ser His Ala Val Phe Gln Ile Tyr Leu Arg Gln Gln Asp
225 230 235 240

Lys Thr Ala Ser Ile Asn Gln Asn Val Arg Ile Ala Lys Met Ser Leu
245 250 255

Ile Asp Leu Ala Gly Ser Glu Arg Ala Ser Thr Ser Gly Ala Lys Gly
260 265 270

Thr Arg Phe Val Glu Gly Thr Asn Ile Asn Arg Ser Leu Leu Ala Leu
275 280 285

Gly Asn Val Ile Asn Ala Leu Ala Asp Ser Lys Arg Lys Asn Gln His
290 295 300

Ile Pro Tyr Arg Asn Ser Lys Leu Thr Arg Leu Leu Lys Asp Ser Leu
305 310 315 320

Gly Gly Asn Cys Gln Thr Ile Met Ile Ala Ala Val Ser Pro Ser Ser
325 330 335

Val Phe Tyr Asp Asp Thr Tyr Asn Thr Leu Lys Tyr Ala Asn Arg Ala
340 345 350

Lys Asp Ile Lys Ser Ser Leu Lys Ser Asn Val Leu Asn Val Asn Asn
355 360 365

```
His Ile Thr Gln Tyr Val Lys Ile Cys Asn Glu Gln Lys Ala Glu Ile
    370                 375                 380

Leu Leu Leu Lys Glu Lys Leu Lys Ala Tyr Glu Glu Gln Lys Ala Phe
385                 390                 395                 400

Thr Asn Glu Asn Asp Gln Ala Lys Leu Met Ile Ser Asn Pro Gln Glu
                405                 410                 415

Lys Glu Ile Glu Arg Phe Gln Glu Ile Leu Asn Cys Leu Phe Gln Asn
            420                 425                 430

Arg Glu Glu Ile Arg Gln Glu Tyr Leu Lys Leu Glu Met Leu Leu Lys
        435                 440                 445

Glu Asn Glu Leu Lys Ser Phe Tyr Gln Gln Gln Cys His Lys Gln Ile
    450                 455                 460

Glu Met Met Cys Ser Glu Asp Lys Val Glu Lys Ala Thr Gly Lys Arg
465                 470                 475                 480

Asp His Arg Leu Ala Met Leu Lys Thr Arg Arg Ser Tyr Leu Glu Lys
                485                 490                 495

Arg Arg Glu Glu Glu Leu Lys Gln Phe Asp Glu Asn Thr Asn Trp Leu
            500                 505                 510

His Arg Val Glu Lys Glu Met Gly Leu Leu Ser Gln Asn Gly His Ile
        515                 520                 525

Pro Lys Glu Leu Lys Lys Asp Leu His Cys His His Leu His Leu Gln
    530                 535                 540

Asn Lys Asp Leu Lys Ala Gln Ile Arg His Met Met Asp Leu Ala Cys
545                 550                 555                 560
```

Leu Gln Glu Gln Gln His Arg Gln Thr Glu Ala Val Leu Asn Ala Leu
565 570 575

Leu Pro Thr Leu Arg Lys Gln Tyr Cys Thr Leu Lys Glu Ala Gly Leu
580 585 590

Ser Asn Ala Ala Phe Glu Ser Asp Phe Lys Glu Ile Glu His Leu Val
595 600 605

Glu Arg Lys Lys Val Val Val Trp Ala Asp Gln Thr Gly Glu Gln Pro
610 615 620

Lys Gln Asn Asp Leu Pro Gly Ile Ser Val Leu Met Thr Phe Ser Gln
625 630 635 640

Leu Gly Pro Val Gln Pro Ile Pro Cys Cys Ser Ser Ser Gly Gly Thr
645 650 655

Asn Leu Val Lys Ile Pro Thr Glu Lys Arg Thr Arg Arg Lys Leu Met
660 665 670

Pro Ser Pro Leu Lys Gly Gln His Thr Leu Lys Ser Pro Pro Ser Gln
675 680 685

Ser Val Gln Leu Asn Asp Ser Leu Ser Lys Glu Leu Gln Pro Ile Val
690 695 700

Tyr Thr Pro Glu Asp Cys Arg Lys Ala Phe Gln Asn Pro Ser Thr Val
705 710 715 720

Thr Leu Met Lys Pro Ser Ser Phe Thr Thr Ser Phe Gln Ala Ile Ser
725 730 735

Ser Asn Ile Asn Ser Asp Asn Cys Leu Lys Met Leu Cys Glu Val Ala
740 745 750

Ile Pro His Asn Arg Arg Lys Glu Cys Gly Gln Glu Asp Leu Asp Ser
755 760 765

Thr Phe Thr Ile Cys Glu Asp Ile Lys Ser Ser Lys Cys Lys Leu Pro
770 775 780

Glu Gln Glu Ser Leu Pro Asn Asp Asn Lys Asp Ile Leu Gln Arg Leu
785 790 795 800

Asp Pro Ser Ser Phe Ser Thr Lys His Ser Met Pro Val Pro Ser Met
805 810 815

Val Pro Ser Tyr Met Ala Met Thr Thr Ala Ala Lys Arg Lys Arg Lys
820 825 830

Leu Thr Ser Ser Thr Ser Asn Ser Ser Leu Thr Ala Asp Val Asn Ser
835 840 845

Gly Phe Ala Lys Arg Val Arg Gln Asp Asn Ser Ser Glu Lys His Leu
850 855 860

Gln Glu Asn Lys Pro Thr Met Glu His Lys Arg Asn Ile Cys Lys Ile
865 870 875 880

Asn Pro Ser Met Val Arg Lys Phe Gly Arg Asn Ile Ser Lys Gly Asn
885 890 895

Leu Arg

<210> 260
<211> 71

<212> PRT
<213> Homo sapiens

<400> 260

Met Ser Lys Asp Arg Ala Asn Met Gln His Arg Tyr Ile Glu Leu Phe
1 5 10 15

Leu Asn Ser Thr Thr Gly Ala Ser Asn Gly Ala Tyr Ser Ser Gln Val
20 25 30

Met Gln Gly Met Gly Val Ser Ala Ala Gln Ala Thr Tyr Ser Gly Leu
35 40 45

Glu Ser Gln Ser Val Ser Gly Cys Tyr Gly Ala Gly Tyr Ser Gly Gln
50 55 60

Asn Ser Met Gly Gly Tyr Asp
65 70

<210> 261
<211> 592
<212> PRT
<213> Homo sapiens

<400> 261

Met Ala Pro Gly Gln Leu Ala Leu Phe Ser Val Ser Asp Lys Thr Gly
1 5 10 15

Leu Val Glu Phe Ala Arg Asn Leu Thr Ala Leu Gly Leu Asn Leu Val
20 25 30

Ala Ser Gly Gly Thr Ala Lys Ala Leu Arg Asp Ala Gly Leu Ala Val
35 40 45

Arg Asp Val Ser Glu Leu Thr Gly Phe Pro Glu Met Leu Gly Gly Arg
50 55 60

Val Lys Thr Leu His Pro Ala Val His Ala Gly Ile Leu Ala Arg Asn
65 70 75 80

Ile Pro Glu Asp Asn Ala Asp Met Ala Arg Leu Asp Phe Asn Leu Ile
85 90 95

Arg Val Val Ala Cys Asn Leu Tyr Pro Phe Val Lys Thr Val Ala Ser
100 105 110

Pro Gly Val Thr Val Glu Glu Ala Val Glu Gln Ile Asp Ile Gly Gly
115 120 125

Val Thr Leu Leu Arg Ala Ala Ala Lys Asn His Ala Arg Val Thr Val
130 135 140

Val Cys Glu Pro Glu Asp Tyr Val Val Val Ser Thr Glu Met Gln Ser
145 150 155 160

Ser Glu Ser Lys Asp Thr Ser Leu Glu Thr Arg Arg Gln Leu Ala Leu
165 170 175

Lys Ala Phe Thr His Thr Ala Gln Tyr Asp Glu Ala Ile Ser Asp Tyr
180 185 190

Phe Arg Lys Gln Tyr Ser Lys Gly Val Ser Gln Met Pro Leu Arg Tyr
195 200 205

Gly Met Asn Pro His Gln Thr Pro Ala Gln Leu Tyr Thr Leu Gln Pro
210 215 220

Lys Leu Pro Ile Thr Val Leu Asn Gly Ala Pro Gly Phe Ile Asn Leu
225 230 235 240

Cys Asp Ala Leu Asn Ala Trp Gln Leu Val Lys Glu Leu Lys Glu Ala
245 250 255

Leu Gly Ile Pro Ala Ala Ala Ser Phe Lys His Val Ser Pro Ala Gly
260 265 270

Ala Ala Val Gly Ile Pro Leu Ser Glu Asp Glu Ala Lys Val Cys Met
275 280 285

Val Tyr Asp Leu Tyr Lys Thr Leu Thr Pro Ile Ser Ala Ala Tyr Ala
290 295 300

Arg Ala Arg Gly Ala Asp Arg Met Ser Ser Phe Gly Asp Phe Val Ala
305 310 315 320

Leu Ser Asp Val Cys Asp Val Pro Thr Ala Lys Ile Ile Ser Arg Glu
325 330 335

Val Ser Asp Gly Ile Ile Ala Pro Gly Tyr Glu Glu Glu Ala Leu Thr
340 345 350

Ile Leu Ser Lys Lys Lys Asn Gly Asn Tyr Cys Val Leu Gln Met Asp
355 360 365

Gln Ser Tyr Lys Pro Asp Glu Asn Glu Val Arg Thr Leu Phe Gly Leu
370 375 380

His Leu Ser Gln Lys Arg Asn Asn Gly Val Val Asp Lys Ser Leu Phe
385 390 395 400

Ser Asn Val Val Thr Lys Asn Lys Asp Leu Pro Glu Ser Ala Leu Arg
405 410 415

Asp Leu Ile Val Ala Thr Ile Ala Val Lys Tyr Thr Gln Ser Asn Ser
420 425 430

```
Val Cys Tyr Ala Lys Asn Gly Gln Val Ile Gly Ile Gly Ala Gly Gln
        435                 440                 445

Gln Ser Arg Ile His Cys Thr Arg Leu Ala Gly Asp Lys Ala Asn Tyr
    450                 455                 460

Trp Trp Leu Arg His His Pro Gln Val Leu Ser Met Lys Phe Lys Thr
465                 470                 475                 480

Gly Val Lys Arg Ala Glu Ile Ser Asn Ala Ile Asp Gln Tyr Val Thr
                485                 490                 495

Gly Thr Ile Gly Glu Asp Glu Asp Leu Ile Lys Trp Lys Ala Leu Phe
            500                 505                 510

Glu Glu Val Pro Glu Leu Leu Thr Glu Ala Glu Lys Lys Glu Trp Val
        515                 520                 525

Glu Lys Leu Thr Glu Val Ser Ile Ser Ser Asp Ala Phe Phe Pro Phe
    530                 535                 540

Arg Asp Asn Val Asp Arg Ala Lys Arg Ser Gly Val Ala Tyr Ile Ala
545                 550                 555                 560

Ala Pro Ser Gly Ser Ala Ala Asp Lys Val Val Ile Glu Ala Cys Asp
                565                 570                 575

Glu Leu Gly Ile Ile Leu Ala His Thr Asn Leu Arg Leu Phe His His
            580                 585                 590
```

<210> 262
<211> 62
<212> PRT
<213> Homo sapiens

<400> 262

Met Phe Glu Leu Leu Pro Asn Cys Met Leu Phe Ile Leu Asn Ser Pro
1 5 10 15

Ser Asp Arg Ile Pro Arg Pro Arg Glu Val Lys Lys Thr Ser Pro Arg
20 25 30

Ser Ile Thr Leu Leu Leu Thr Ala Pro Asn Leu Leu Asp Ser Lys Ser
35 40 45

Asn Gly Phe Pro Gly Thr Met Met Leu Val Asp Leu Lys Lys
50 55 60

<210> 263
<211> 43
<212> PRT
<213> Homo sapiens

<400> 263

Met Thr Ala Leu Phe Pro Gly Leu Ala Pro Glu Thr Glu Gln Pro Asp
1 5 10 15

Ile His Thr Pro Arg Arg Gln Leu Glu Val Pro Pro Gly Asn Gln Asn
20 25 30

His Pro Gln Arg Arg Pro Pro Asp Thr Asp Ile
35 40

<210> 264
<211> 303
<212> PRT
<213> Homo sapiens

<400> 264

Met Lys Pro Thr Gly Thr Asp Pro Arg Ile Leu Ser Ile Ala Ala Glu

1 5 10 15

Val Ala Lys Ser Pro Glu Gln Asn Val Pro Val Ile Leu Leu Lys Leu
20 25 30

Lys Glu Ile Ile Asn Ile Thr Pro Leu Gly Ser Ser Glu Leu Lys Lys
35 40 45

Ile Lys Gln Asp Ile Tyr Cys Tyr Asp Leu Ile Gln Tyr Cys Leu Leu
50 55 60

Val Leu Ser Gln Asp Tyr Ser Arg Ile Gln Gly Gly Trp Thr Thr Ile
65 70 75 80

Ser Gln Leu Thr Gln Ile Leu Ser His Cys Cys Val Gly Leu Glu Pro
85 90 95

Gly Glu Asp Ala Glu Glu Phe Tyr Asn Glu Leu Leu Pro Ser Ala Ala
100 105 110

Glu Asn Phe Leu Val Leu Gly Arg Gln Leu Gln Thr Cys Phe Ile Asn
115 120 125

Ala Ala Lys Ala Glu Glu Lys Asp Glu Leu Leu His Phe Phe Gln Ile
130 135 140

Val Thr Asp Ser Leu Phe Trp Leu Leu Gly Gly His Val Glu Leu Ile
145 150 155 160

Gln Asn Val Leu Gln Ser Asp His Phe Leu His Leu Leu Gln Ala Asp
165 170 175

Asn Val Gln Ile Gly Ser Ala Val Met Met Met Leu Gln Asn Ile Leu
180 185 190

```
Gln Ile Asn Ser Gly Asp Leu Leu Arg Ile Gly Arg Lys Ala Leu Tyr
        195                 200                 205

Ser Ile Leu Asp Glu Val Ile Phe Lys Leu Phe Ser Thr Pro Ser Pro
    210                 215                 220

Val Ile Arg Ser Thr Ala Thr Lys Leu Leu Leu Leu Met Ala Glu Ser
225                 230                 235                 240

His Gln Glu Ile Leu Ile Leu Leu Arg Gln Ser Thr Cys Tyr Lys Gly
                245                 250                 255

Leu Arg Arg Leu Leu Ser Lys Gln Glu Thr Gly Thr Glu Phe Ser Gln
            260                 265                 270

Glu Leu Arg Gln Leu Val Gly Leu Leu Ser Pro Met Val Tyr Gln Glu
        275                 280                 285

Val Glu Glu Gln Ile Gln Thr Ile Lys Asp Val Ala Gly Asp Lys
    290                 295                 300
```

<210> 265
<211> 264
<212> PRT
<213> Homo sapiens

<400> 265

```
Met Leu Leu Glu Ile Asn Arg Gln Lys Glu Glu Glu Asp Leu Lys Leu
1               5                   10                  15

Gln Leu Gln Leu Gln Arg Gln Arg Ala Met Arg Leu Ser Arg Glu Leu
            20                  25                  30

Gln Leu Ser Met Leu Glu Ile Val His Pro Gly Gln Val Glu Lys His
        35                  40                  45
```

Tyr Arg Glu Met Glu Glu Lys Ser Ala Leu Ile Ile Gln Lys His Trp
50 55 60

Arg Gly Tyr Arg Glu Arg Lys Asn Phe His Gln Gln Arg Gln Ser Leu
65 70 75 80

Ile Glu Tyr Lys Ala Ala Val Thr Leu Gln Arg Ala Ala Leu Lys Phe
85 90 95

Leu Ala Lys Tyr Arg Lys Lys Lys Lys Leu Phe Ala Pro Trp Arg Gly
100 105 110

Leu Gln Glu Leu Thr Asp Ala Arg Arg Val Glu Leu Lys Lys Arg Val
115 120 125

Asp Asp Tyr Val Arg Arg His Leu Gly Ser Pro Met Ser Asp Val Val
130 135 140

Ser Arg Glu Leu His Ala Gln Ala Gln Glu Arg Leu Gln His Tyr Phe
145 150 155 160

Met Gly Arg Ala Leu Glu Glu Arg Ala Gln Gln His Arg Glu Ala Leu
165 170 175

Ile Ala Gln Ile Ser Thr Asn Val Glu Gln Leu Met Lys Ala Pro Ser
180 185 190

Leu Lys Glu Ala Glu Gly Lys Glu Pro Glu Leu Phe Leu Ser Arg Ser
195 200 205

Arg Pro Val Ala Ala Lys Ala Lys Gln Ala His Leu Thr Thr Leu Lys
210 215 220

His Ile Gln Ala Pro Trp Trp Lys Lys Leu Gly Glu Glu Ser Gly Asp
225 230 235 240

Glu Ile Asp Val Pro Lys Asp Glu Leu Ser Ile Glu Leu Glu Asn Leu
245 250 255

Phe Ile Gly Gly Thr Lys Pro Pro
260

<210> 266
<211> 248
<212> PRT
<213> Homo sapiens

<400> 266

Met Ser Gly Gly Gly Val Ile Arg Gly Pro Ala Gly Asn Asn Asp Cys
1 5 10 15

Arg Ile Tyr Val Gly Asn Leu Pro Pro Asp Ile Arg Thr Lys Asp Ile
20 25 30

Glu Asp Val Phe Tyr Lys Tyr Gly Ala Ile Arg Asp Ile Asp Leu Lys
35 40 45

Asn Arg Arg Gly Gly Pro Pro Phe Ala Phe Val Glu Phe Glu Asp Pro
50 55 60

Arg Asp Ala Glu Asp Ala Val Tyr Gly Arg Asp Gly Tyr Asp Tyr Asp
65 70 75 80

Gly Tyr Arg Leu Arg Val Glu Phe Pro Arg Ser Gly Arg Gly Thr Gly
85 90 95

Arg Gly Gly Gly Gly Gly Gly Gly Gly Gly Ala Pro Arg Gly Arg Tyr
100 105 110

```
Gly Pro Pro Ser Arg Arg Ser Glu Asn Arg Val Val Val Ser Gly Leu
        115                 120                 125

Pro Pro Ser Gly Ser Trp Gln Asp Leu Lys Asp His Met Arg Glu Ala
    130                 135                 140

Gly Asp Val Cys Tyr Ala Asp Val Tyr Arg Asp Gly Thr Gly Val Val
145                 150                 155                 160

Glu Phe Val Arg Lys Glu Asp Met Thr Tyr Ala Val Arg Lys Leu Asp
                165                 170                 175

Asn Thr Lys Phe Arg Ser His Glu Gly Glu Thr Ala Tyr Ile Arg Val
            180                 185                 190

Lys Val Asp Gly Pro Arg Ser Pro Ser Tyr Gly Arg Ser Arg Ser Arg
        195                 200                 205

Ser Arg Ser Arg Ser Arg Ser Arg Ser Arg Ser Asn Ser Arg Ser Arg
    210                 215                 220

Ser Tyr Ser Pro Arg Arg Ser Arg Gly Ser Pro Arg Tyr Ser Pro Arg
225                 230                 235                 240

His Ser Arg Ser Arg Ser Arg Thr
                245
```

<210> 267
<211> 313
<212> PRT
<213> Homo sapiens

<400> 267

```
Met Pro Val Ala Gly Ser Glu Leu Pro Arg Arg Pro Leu Pro Pro Ala
1               5                   10                  15
```

Ala Gln Glu Arg Asp Ala Glu Pro Arg Pro Pro His Gly Glu Leu Gln
20 25 30

Tyr Leu Gly Gln Ile Gln His Ile Leu Arg Cys Gly Val Arg Lys Asp
35 40 45

Asp Arg Thr Gly Thr Gly Thr Leu Ser Val Phe Gly Met Gln Ala Arg
50 55 60

Tyr Ser Leu Arg Asp Glu Phe Pro Leu Leu Thr Thr Lys Arg Val Phe
65 70 75 80

Trp Lys Gly Val Leu Glu Glu Leu Leu Trp Phe Ile Lys Gly Ser Thr
85 90 95

Asn Ala Lys Glu Leu Ser Ser Lys Gly Val Lys Ile Trp Asp Ala Asn
100 105 110

Gly Ser Arg Asp Phe Leu Asp Ser Leu Gly Phe Ser Thr Arg Glu Glu
115 120 125

Gly Asp Leu Gly Pro Val Tyr Gly Phe Gln Trp Arg His Phe Gly Ala
130 135 140

Glu Tyr Arg Asp Met Glu Ser Asp Tyr Ser Gly Gln Gly Val Asp Gln
145 150 155 160

Leu Gln Arg Val Ile Asp Thr Ile Lys Thr Asn Pro Asp Asp Arg Arg
165 170 175

Ile Ile Met Cys Ala Trp Asn Pro Arg Asp Leu Pro Leu Met Ala Leu
180 185 190

```
Pro Pro Cys His Ala Leu Cys Gln Phe Tyr Val Val Asn Ser Glu Leu
        195                 200                 205

Ser Cys Gln Leu Tyr Gln Arg Ser Gly Asp Met Gly Leu Gly Val Pro
    210                 215                 220

Phe Asn Ile Ala Ser Tyr Ala Leu Leu Thr Tyr Met Ile Ala His Ile
225                 230                 235                 240

Thr Gly Leu Lys Pro Gly Asp Phe Ile His Thr Leu Gly Asp Ala His
                245                 250                 255

Ile Tyr Leu Asn His Ile Glu Pro Leu Lys Ile Gln Leu Gln Arg Glu
            260                 265                 270

Pro Arg Pro Phe Pro Lys Leu Arg Ile Leu Arg Lys Val Glu Lys Ile
        275                 280                 285

Asp Asp Phe Lys Ala Glu Asp Phe Gln Ile Glu Gly Tyr Asn Pro His
    290                 295                 300

Pro Thr Ile Lys Met Glu Met Ala Val
305                 310
```

<210> 268
<211> 511
<212> PRT
<213> Homo sapiens

<400> 268

```
Met Ala Val Arg Leu Ala Gly Gly Leu Gln Lys Met Val Ala Leu Leu
1               5                   10                  15

Asn Lys Thr Asn Val Lys Phe Leu Ala Ile Thr Thr Asp Cys Leu Gln
            20                  25                  30
```

Ile Leu Ala Tyr Gly Asn Gln Glu Ser Lys Leu Ile Ile Leu Ala Ser
35 40 45

Gly Gly Pro Gln Ala Leu Val Asn Ile Met Arg Thr Tyr Thr Tyr Glu
50 55 60

Lys Leu Leu Trp Thr Thr Ser Arg Val Leu Lys Val Leu Ser Val Cys
65 70 75 80

Ser Ser Asn Lys Pro Ala Ile Val Glu Ala Gly Gly Met Gln Ala Leu
85 90 95

Gly Leu His Leu Thr Asp Pro Ser Gln Arg Leu Val Gln Asn Cys Leu
100 105 110

Trp Thr Leu Arg Asn Leu Ser Asp Ala Ala Thr Lys Gln Glu Gly Met
115 120 125

Glu Gly Leu Leu Gly Thr Leu Val Gln Leu Leu Gly Ser Asp Asp Ile
130 135 140

Asn Val Val Thr Cys Ala Ala Gly Ile Leu Ser Asn Leu Thr Cys Asn
145 150 155 160

Asn Tyr Lys Asn Lys Met Met Val Cys Gln Val Gly Gly Ile Glu Ala
165 170 175

Leu Val Arg Thr Val Leu Arg Ala Gly Asp Arg Glu Asp Ile Thr Glu
180 185 190

Pro Ala Ile Cys Ala Leu Arg His Leu Thr Ser Arg His Gln Glu Ala
195 200 205

Glu Met Ala Gln Asn Ala Val Arg Leu His Tyr Gly Leu Pro Val Val

```
    210                 215                 220

Val Lys Leu Leu His Pro Pro Ser His Trp Pro Leu Ile Lys Ala Thr
225                 230                 235                 240

Val Gly Leu Ile Arg Asn Leu Ala Leu Cys Pro Ala Asn His Ala Pro
                245                 250                 255

Leu Arg Glu Gln Gly Ala Ile Pro Arg Leu Val Gln Leu Leu Val Arg
            260                 265                 270

Ala His Gln Asp Thr Gln Arg Arg Thr Ser Met Gly Gly Thr Gln Gln
        275                 280                 285

Gln Phe Val Glu Gly Val Arg Met Glu Glu Ile Val Glu Gly Cys Thr
    290                 295                 300

Gly Ala Leu His Ile Leu Ala Arg Asp Val His Asn Arg Ile Val Ile
305                 310                 315                 320

Arg Gly Leu Asn Thr Ile Pro Leu Phe Val Gln Leu Leu Tyr Ser Pro
                325                 330                 335

Ile Glu Asn Ile Gln Arg Val Ala Ala Gly Val Leu Cys Glu Leu Ala
            340                 345                 350

Gln Asp Lys Glu Ala Ala Glu Ala Ile Glu Ala Glu Gly Ala Thr Ala
        355                 360                 365

Pro Leu Thr Glu Leu Leu His Ser Arg Asn Glu Gly Val Ala Thr Tyr
    370                 375                 380

Ala Ala Ala Val Leu Phe Arg Met Ser Glu Asp Lys Pro Gln Asp Tyr
385                 390                 395                 400
```

Lys Lys Arg Leu Ser Val Glu Leu Thr Ser Ser Leu Phe Arg Thr Glu
405 410 415

Pro Met Ala Trp Asn Glu Thr Ala Asp Leu Gly Leu Asp Ile Gly Ala
420 425 430

Gln Gly Glu Pro Leu Gly Tyr Arg Gln Asp Asp Pro Ser Tyr Arg Ser
435 440 445

Phe His Ser Gly Gly Tyr Gly Gln Asp Ala Leu Gly Met Asp Pro Met
450 455 460

Met Glu His Glu Met Gly Gly His His Pro Gly Ala Asp Tyr Pro Val
465 470 475 480

Asp Gly Leu Pro Asp Leu Gly His Ala Gln Asp Leu Met Asp Gly Leu
485 490 495

Pro Pro Gly Asp Ser Asn Gln Leu Ala Trp Phe Asp Thr Asp Leu
500 505 510

<210> 269
<211> 128
<212> PRT
<213> Homo sapiens

<400> 269

Met Phe Asp Val Thr Ser Arg Val Thr Tyr Lys Asn Val Pro Asn Trp
1 5 10 15

His Arg Asp Leu Val Arg Val Cys Glu Asn Ile Pro Ile Val Leu Cys
20 25 30

Gly Asn Lys Val Asp Ile Lys Asp Arg Lys Val Lys Ala Lys Ser Ile
35 40 45

Val Phe His Arg Lys Lys Asn Leu Gln Tyr Tyr Asp Ile Ser Ala Lys
50 55 60

Ser Asn Tyr Asn Phe Glu Lys Pro Phe Leu Trp Leu Ala Arg Lys Leu
65 70 75 80

Ile Gly Asp Pro Asn Leu Glu Phe Val Ala Met Pro Ala Leu Ala Pro
85 90 95

Pro Glu Val Val Met Asp Pro Ala Leu Ala Ala Gln Tyr Glu His Asp
100 105 110

Leu Glu Val Ala Gln Thr Thr Ala Leu Pro Asp Glu Asp Asp Asp Leu
115 120 125

<210> 270
<211> 506
<212> PRT
<213> Homo sapiens

<400> 270

Met Glu Asp His Gln His Val Pro Ile Asp Ile Gln Thr Ser Lys Leu
1 5 10 15

Leu Asp Trp Leu Val Asp Arg Arg His Cys Ser Leu Lys Trp Gln Ser
20 25 30

Leu Val Leu Thr Ile Arg Glu Lys Ile Asn Ala Ala Ile Gln Asp Met
35 40 45

Pro Glu Ser Glu Glu Ile Ala Gln Leu Leu Ser Gly Ser Tyr Ile His
50 55 60

Tyr Phe His Cys Leu Arg Ile Leu Asp Leu Leu Lys Gly Thr Glu Ala

65 70 75 80

Ser Thr Lys Asn Ile Phe Gly Arg Tyr Ser Ser Gln Arg Met Lys Asp
85 90 95

Trp Gln Glu Ile Ile Ala Leu Tyr Glu Lys Asp Asn Thr Tyr Leu Val
100 105 110

Glu Leu Ser Ser Leu Leu Val Arg Asn Val Asn Tyr Glu Ile Pro Ser
115 120 125

Leu Lys Lys Gln Ile Ala Lys Cys Gln Gln Leu Gln Gln Glu Tyr Ser
130 135 140

Arg Lys Glu Glu Glu Cys Gln Ala Gly Ala Ala Glu Met Arg Glu Gln
145 150 155 160

Phe Tyr His Ser Cys Lys Gln Tyr Gly Ile Thr Gly Glu Asn Val Arg
165 170 175

Gly Glu Leu Leu Ala Leu Val Lys Asp Leu Pro Ser Gln Leu Ala Glu
180 185 190

Ile Gly Ala Ala Ala Gln Gln Ser Leu Gly Glu Ala Ile Asp Val Tyr
195 200 205

Gln Ala Ser Val Gly Phe Val Cys Glu Ser Pro Thr Glu Gln Val Leu
210 215 220

Pro Met Leu Arg Phe Val Gln Lys Arg Gly Asn Ser Thr Val Tyr Glu
225 230 235 240

Trp Arg Thr Gly Thr Glu Pro Ser Val Val Glu Arg Pro His Leu Glu
245 250 255

Glu Leu Pro Glu Gln Val Ala Glu Asp Ala Ile Asp Trp Gly Asp Phe
260 265 270

Gly Val Glu Ala Val Ser Glu Gly Thr Asp Ser Gly Ile Ser Ala Glu
275 280 285

Ala Ala Gly Ile Asp Trp Gly Ile Phe Pro Glu Ser Asp Ser Lys Asp
290 295 300

Pro Gly Gly Asp Gly Ile Asp Trp Gly Asp Asp Ala Val Ala Leu Gln
305 310 315 320

Ile Thr Val Leu Glu Ala Gly Thr Gln Ala Pro Glu Gly Val Ala Arg
325 330 335

Gly Pro Asp Ala Leu Thr Leu Leu Glu Tyr Thr Glu Thr Arg Asn Gln
340 345 350

Phe Leu Asp Glu Leu Met Glu Leu Glu Ile Phe Leu Ala Gln Arg Ala
355 360 365

Val Glu Leu Ser Glu Glu Ala Asp Val Leu Ser Val Ser Gln Phe Gln
370 375 380

Leu Ala Pro Ala Ile Leu Gln Gly Gln Thr Lys Glu Lys Met Val Thr
385 390 395 400

Met Val Ser Val Leu Glu Asp Leu Ile Gly Lys Leu Thr Ser Leu Gln
405 410 415

Leu Gln His Leu Phe Met Ile Leu Ala Ser Pro Arg Tyr Val Asp Arg
420 425 430

Val Thr Glu Phe Leu Gln Gln Lys Leu Lys Gln Ser Gln Leu Leu Ala

435 440 445

Leu Lys Lys Glu Leu Met Val Gln Lys Gln Gln Glu Ala Leu Glu Glu
450 455 460

Gln Ala Ala Leu Glu Pro Lys Leu Asp Leu Leu Leu Glu Lys Thr Lys
465 470 475 480

Glu Leu Gln Lys Leu Ile Glu Ala Asp Ile Ser Lys Arg Tyr Ser Gly
485 490 495

Arg Pro Val Asn Leu Met Gly Thr Ser Leu
500 505

<210> 271
<211> 136
<212> PRT
<213> Homo sapiens

<400> 271

Met Thr Ser Leu Cys Met Ala Met Thr Glu Glu Gln His Lys Ser Val
1 5 10 15

Val Ile Asp Cys Ser Ser Ser Gln Pro Gln Phe Cys Asn Ala Gly Ser
20 25 30

Asn Arg Phe Cys Glu Asp Trp Met Gln Ala Phe Leu Asn Gly Ala Lys
35 40 45

Gly Gly Asn Pro Phe Leu Phe Arg Gln Val Leu Glu Asn Phe Lys Leu
50 55 60

Lys Ala Ile Gln Asp Thr Asn Asn Leu Lys Arg Phe Ile Arg Gln Ala
65 70 75 80

Glu Met Asn His Tyr Ala Leu Phe Lys Cys Tyr Met Phe Leu Lys Asn
85 90 95

Cys Gly Ser Gly Asp Ile Leu Leu Lys Ile Val Lys Val Glu His Glu
100 105 110

Glu Met Pro Glu Ala Lys Asn Val Ile Ala Val Leu Glu Glu Phe Met
115 120 125

Lys Glu Ala Leu Asp Gln Ser Phe
130 135

<210> 272
<211> 509
<212> PRT
<213> Homo sapiens

<400> 272

Met Phe Thr Asn Asp Met Met Glu Cys Lys Gln Asp Glu Ile Val Met
1 5 10 15

Gln Gly Met Asp Pro Ser Ala Leu Glu Ala Leu Ile Asn Phe Ala Tyr
20 25 30

Asn Gly Asn Leu Ala Ile Asp Gln Gln Asn Val Gln Ser Leu Leu Met
35 40 45

Gly Ala Ser Phe Leu Gln Leu Gln Ser Ile Lys Asp Ala Cys Cys Thr
50 55 60

Phe Leu Arg Glu Arg Leu His Pro Lys Asn Cys Leu Gly Val Arg Gln
65 70 75 80

Phe Ala Glu Thr Met Met Cys Ala Val Leu Tyr Asp Ala Ala Asn Ser
85 90 95

Phe Ile His Gln His Phe Val Glu Val Ser Met Ser Glu Glu Phe Leu
100 105 110

Ala Leu Pro Leu Glu Asp Val Leu Glu Leu Val Ser Arg Asp Glu Leu
115 120 125

Asn Val Lys Ser Glu Glu Gln Val Phe Glu Ala Ala Leu Ala Trp Val
130 135 140

Arg Tyr Asp Arg Glu Gln Arg Gly Pro Tyr Leu Pro Glu Leu Leu Ser
145 150 155 160

Asn Ile Arg Leu Pro Leu Cys Arg Pro Gln Phe Leu Ser Asp Arg Val
165 170 175

Gln Gln Asp Asp Leu Val Arg Cys Cys His Lys Cys Arg Asp Leu Val
180 185 190

Asp Glu Ala Lys Asp Tyr His Leu Met Pro Glu Arg Arg Pro His Leu
195 200 205

Pro Ala Phe Arg Thr Arg Pro Arg Cys Cys Thr Ser Ile Ala Gly Leu
210 215 220

Ile Tyr Ala Val Gly Gly Leu Asn Ser Ala Gly Asp Ser Leu Asn Val
225 230 235 240

Val Glu Val Phe Asp Pro Ile Ala Asn Cys Trp Glu Arg Cys Arg Pro
245 250 255

Met Thr Thr Ala Arg Ser Arg Val Gly Val Ala Val Val Asn Gly Leu
260 265 270

Leu Tyr Ala Ile Gly Gly Tyr Asp Gly Gln Leu Arg Leu Ser Thr Val

275 280 285

Glu Ala Tyr Asn Pro Glu Thr Asp Thr Trp Thr Arg Val Gly Ser Met
290 295 300

Asn Ser Lys Arg Ser Ala Met Gly Thr Val Val Leu Asp Gly Gln Ile
305 310 315 320

Tyr Val Cys Gly Gly Tyr Asp Gly Asn Ser Ser Leu Ser Ser Val Glu
325 330 335

Thr Tyr Ser Pro Glu Thr Asp Lys Trp Thr Val Val Thr Ser Met Ser
340 345 350

Ser Asn Arg Ser Ala Ala Gly Val Thr Val Phe Glu Gly Arg Ile Tyr
355 360 365

Val Ser Gly Gly His Asp Gly Leu Gln Ile Phe Ser Ser Val Glu His
370 375 380

Tyr Asn His His Thr Ala Thr Trp His Pro Ala Ala Gly Met Leu Asn
385 390 395 400

Lys Arg Cys Arg His Gly Ala Ala Ser Leu Gly Ser Lys Met Phe Val
405 410 415

Cys Gly Gly Tyr Asp Gly Ser Gly Phe Leu Ser Ile Ala Glu Met Tyr
420 425 430

Ser Ser Val Ala Asp Gln Trp Cys Leu Ile Val Pro Met His Thr Arg
435 440 445

Arg Ser Arg Val Ser Leu Val Ala Ser Cys Gly Arg Leu Tyr Ala Val
450 455 460

Gly Gly Tyr Asp Gly Gln Ser Asn Leu Ser Ser Val Glu Met Tyr Asp
465 470 475 480

Pro Glu Thr Asp Cys Trp Thr Phe Met Ala Pro Met Ala Cys His Glu
485 490 495

Gly Gly Val Gly Val Gly Cys Ile Pro Leu Leu Thr Ile
500 505

<210> 273
<211> 49
<212> PRT
<213> Homo sapiens

<400> 273

Met Ser Phe Ser Ala Ile Leu Ser Pro Phe Ser Ser Leu Ser Val Asn
1 5 10 15

Val Arg Asn Leu Arg Gln Arg Gly Lys Gly Arg Gln Asn Ser Arg Ile
20 25 30

Leu Thr Leu Ile Val Lys Ile Leu Phe Lys Thr Trp His Leu Ile Phe
35 40 45

Leu

<210> 274
<211> 109
<212> PRT
<213> Homo sapiens

<400> 274

Met Glu Ser His Ser Val Thr Gln Ala Gly Val Gln Trp His Asp Leu
1 5 10 15

Gly Ser Leu His Ser Pro Leu Leu Gly Ser Ser Asp Ser Pro Thr Ser
20 25 30

Ala Ser Arg Val Ala Gly Ile Thr Gly Met Gln His His Thr Gln Leu
35 40 45

Ile Phe Leu Phe Leu Val Glu Met Gly Phe His His Val Gly Gln Ala
50 55 60

Gly Leu Lys Leu Leu Thr Ser Gly Asp Pro Pro Ala Ser Ala Ser Gln
65 70 75 80

Ser Ala Gly Ile Thr Gly Val Gly His His Thr Trp Pro Ile Met Glu
85 90 95

Asp Phe Leu Met Val Met Phe Glu Leu Gly Phe Gly Glu
100 105

<210> 275
<211> 54
<212> PRT
<213> Homo sapiens

<400> 275

Met Glu Ser Asn Ile Ile Tyr Thr Pro Ser Leu Pro Leu Phe Leu Pro
1 5 10 15

Pro Phe Leu Pro Pro Ser Leu Pro Pro Phe Leu Pro Pro Phe Ser Leu
20 25 30

Ser Leu Ser Leu Pro Ala Ser Leu Pro Phe Phe Leu Leu Cys Leu Leu
35 40 45

Pro Cys Asp Trp Gly Lys
50

<210> 276
<211> 66
<212> PRT
<213> Homo sapiens

<400> 276

Met Leu Leu Tyr Arg Leu Ala Gln Leu Gly Leu Tyr Phe Leu Tyr Ser
1 5 10 15

Met Pro Val Glu His Gln Met Leu Asn Thr Ser Thr Cys Cys Asp Phe
20 25 30

Ala Ile Pro Ala His Ile Thr His Leu Ile Ser Phe Val Gly Gly His
35 40 45

Val Gly Trp Pro Thr His Trp Gln Val Asn Ser Leu Ile Trp Thr Met
50 55 60

Ser His
65

<210> 277
<211> 180
<212> PRT
<213> Homo sapiens

<400> 277

Met Arg Pro Leu Thr Glu Glu Glu Thr Arg Val Met Phe Glu Lys Ile
1 5 10 15

Ala Lys Tyr Ile Gly Glu Asn Leu Gln Leu Leu Val Asp Arg Pro Asp
20 25 30

Gly Thr Tyr Cys Phe Arg Leu His Asn Asp Arg Val Tyr Tyr Val Ser
35 40 45

Glu Lys Ile Met Lys Leu Ala Ala Asn Ile Ser Gly Asp Lys Leu Val
50 55 60

Ser Leu Gly Thr Cys Phe Gly Lys Phe Thr Lys Thr His Lys Phe Arg
65 70 75 80

Leu His Val Thr Ala Leu Asp Tyr Leu Ala Pro Tyr Ala Lys Tyr Lys
85 90 95

Val Trp Ile Lys Pro Gly Ala Glu Gln Ser Phe Leu Tyr Gly Asn His
100 105 110

Val Leu Lys Ser Gly Leu Gly Arg Ile Thr Glu Asn Thr Ser Gln Tyr
115 120 125

Gln Gly Val Val Val Tyr Ser Met Ala Asp Ile Pro Leu Gly Phe Gly
130 135 140

Val Ala Ala Lys Ser Thr Gln Asp Cys Arg Lys Val Asp Pro Met Ala
145 150 155 160

Ile Val Val Phe His Gln Ala Asp Ile Gly Glu Tyr Val Arg His Glu
165 170 175

Glu Thr Leu Thr
180

<210> 278
<211> 34
<212> PRT
<213> Homo sapiens

<400> 278

Met Gly Leu Glu Arg Gly Phe Asp Pro Arg Ser Leu Cys Ala Phe Ala

1 5 10 15

Ala Glu Pro His Asn Leu Ser Phe Gln Lys His Phe Gln Asn Ala Asn
20 25 30

Ile Phe

<210> 279
<211> 168
<212> PRT
<213> Homo sapiens

<400> 279

Met Leu Arg Val Asn Phe Phe Phe Phe Phe Phe Phe Phe Ser Phe
1 5 10 15

Ser Leu Arg Leu Gly Leu Ala Leu Leu Pro Arg Leu Glu Trp Ser Gly
20 25 30

Val Ile Leu Ala Tyr Cys Ser Leu Cys Leu Pro Gly Ser Ser Ser Pro
35 40 45

Ala Ser Ala Ser Gly Val Ala Gly Thr Thr Gly Ser Cys His His Gly
50 55 60

Gln Pro Thr Phe Ala Cys Phe Val Lys Met Gly Ser His Ser Val Ala
65 70 75 80

Gln Ala Gly Leu Lys Leu Leu Gly Ser Gly Asp Pro Pro Val Ser Ala
85 90 95

Ser Gln Ser Ala Gly Ile Thr Ile Val Ser His His Val Gln Leu Glu
100 105 110

Gly Ser Thr Ser Phe Thr Phe Cys Lys His Ile Cys Ile Phe Thr Pro
115 120 125

Pro Phe Pro Ser Phe Ser Leu Phe Ile Ser His Phe Tyr Ile Asp Leu
130 135 140

Leu Phe Tyr Asn Lys Thr Leu Leu Pro Lys Lys Lys Lys Lys Lys Lys
145 150 155 160

Lys Lys Lys Lys Lys Lys Lys Lys
165

<210> 280
<211> 158
<212> PRT
<213> Homo sapiens

<400> 280

Met Met Ile Trp Ile His Gln Asp Leu Phe Tyr Ala Gln Gly Gln Phe
1 5 10 15

Leu Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Glu Thr Gly Ser
20 25 30

Arg Phe Val Ala Gln Ala Gly Val Glu Trp Arg Asp Leu Gly Leu Leu
35 40 45

Gln Pro Leu Pro Pro Arg Leu Glu Gln Ser Cys Leu Ser Leu Arg Ser
50 55 60

Ser Trp Asp His Arg Phe Met Pro Pro Trp Pro Ala Asn Phe Cys Met
65 70 75 80

Phe Cys Lys Asp Gly Val Ser Gln Cys Cys Pro Gly Trp Ser Gln Thr
85 90 95

Pro Gly Leu Arg Arg Ser Thr Cys Leu Ser Leu Pro Glu Cys Trp Asp
100 105 110

Tyr Asn Cys Glu Pro Pro Arg Pro Ala Gly Arg Val Asn Ile Phe Tyr
115 120 125

Ile Leu Gln Ala His Leu His Phe His Pro Thr Leu Pro Leu Leu Leu
130 135 140

Pro Phe Tyr Ile Pro Phe Leu Tyr Arg Ser Leu Ile Leu Gln
145 150 155

<210> 281
<211> 43
<212> PRT
<213> Homo sapiens

<400> 281

Met Pro Leu Gly Pro Val Gln Val Tyr Leu Ser Leu Ile Ser Glu Ser
1 5 10 15

Cys Ser Ser Cys Leu Thr Leu Pro His Gly Ser Ser Val His Leu Ser
20 25 30

Ile Thr Val Leu Asn Pro Phe Ser Ile Ser Val
35 40

<210> 282
<211> 61
<212> PRT
<213> Homo sapiens

<400> 282

Met Lys Lys Leu Thr Leu Pro Met Gly Leu Pro Pro Phe Leu Pro Leu
1 5 10 15

Phe Ser Leu Trp Tyr Pro Ser Arg Val Phe Pro Ser Pro Leu Gln Ser
20 25 30

Pro Ile Ser His Leu Phe Phe Phe Ser Pro Ser Ser Phe Ser Tyr Cys
35 40 45

Val Leu Pro Ala Thr Ser His Arg Leu Val Val Tyr Lys
50 55 60

<210> 283
<211> 207
<212> PRT
<213> Homo sapiens

<400> 283

Met Gln Lys Met Leu Pro Glu Ile Asp Gln Asn Lys Asp Arg Met Leu
1 5 10 15

Glu Ile Leu Glu Gly Lys Gly Leu Ser Phe Leu Phe Pro Leu Leu Lys
20 25 30

Leu Glu Lys Glu Leu Leu Lys Gln Ile Lys Leu Asp Pro Ser Pro Gln
35 40 45

Thr Ile Tyr Lys Trp Ile Lys Asp Asn Ile Ser Pro Lys Leu His Val
50 55 60

Asp Lys Gly Phe Val Asn Ile Leu Met Thr Ser Phe Leu Gln Tyr Ile
65 70 75 80

Ser Ser Glu Val Asn Pro Pro Ser Asp Glu Thr Asp Ser Ser Ser Ala
85 90 95

Pro Ser Lys Glu Gln Leu Glu Gln Glu Lys Gln Leu Leu Leu Ser Phe
100 105 110

```
Lys Pro Val Met Gln Lys Phe Leu His Asp His Val Asp Leu Gln Val
        115                 120                 125

Ser Ala Leu Tyr Ala Leu Gln Val His Cys Tyr Asn Ser Asn Phe Pro
    130                 135                 140

Lys Gly Met Leu Leu Arg Phe Phe Val His Phe Tyr Asp Met Glu Ile
145                 150                 155                 160

Ile Glu Glu Glu Ala Phe Leu Ala Trp Lys Glu Asp Ile Thr Gln Glu
                165                 170                 175

Phe Pro Gly Lys Gly Lys Ala Leu Phe Gln Val Asn Gln Trp Leu Thr
            180                 185                 190

Trp Leu Glu Thr Ala Glu Glu Glu Glu Ser Glu Glu Glu Ala Asp
        195                 200                 205
```

<210> 284
<211> 104
<212> PRT
<213> Homo sapiens

<220>
<221> UNSURE
<222> (80)..(80)
<223> X at position 80 may be "Asp" or "Glu"

<400> 284

```
Phe Ser Cys Leu Ser Phe Leu Ser Ser Trp Asp Tyr Arg His Ala Pro
1               5                   10                  15

Pro Cys Leu Ala Asn Phe Ala Phe Leu Val Glu Thr Gly Phe His His
            20                  25                  30
```

Val Gly Gln Ala Gly Leu Lys Leu Pro Thr Ser Gly Asp Leu Pro Thr
35 40 45

Ser Ala Ser Gln Ser Ala Gly Ile Thr Gly Met Ser Tyr Arg Ala Trp
50 55 60

Pro Val Tyr Phe Trp Arg Gln Ser Leu Ala Leu Leu Pro Arg Leu Gly
65 70 75 80

Ser Gly Ala Thr Leu Asn Ser Ala Ser Arg Val Gln Ala Ile Leu Val
85 90 95

Arg His Leu Pro Ser Ser Trp Gly
100

<210> 285
<211> 91
<212> PRT
<213> Homo sapiens

<400> 285

Leu Thr Ala Val Phe Phe Ser Phe Ile His Phe Ala Phe Phe Leu Tyr
1 5 10 15

Phe Arg Phe Asn Ser Thr Phe Lys Lys Ser Tyr Leu Tyr Ile Cys Ile
20 25 30

Phe Ile Phe Ile Phe Gln Asp Leu Ile Cys Leu Phe Phe Ile Met Gly
35 40 45

Tyr Tyr Cys Ser Met Val Gln Asn Leu Leu Phe Phe Pro Lys Leu Leu
50 55 60

Val Ile Phe Lys Ile Phe Val Asn Phe Leu Pro Leu Ala Ser Ser Gln
65 70 75 80

Val Pro Ala Phe Ser Gln Ser Ala Gly Phe Pro
85 90

<210> 286
<211> 75
<212> PRT
<213> Homo sapiens

<400> 286

Pro Lys Ser Leu Pro Gly His Pro Leu Ala Tyr Ser Leu Thr Gly His
1 5 10 15

Ala Pro Ala Val His Thr Gly Ser Tyr Gln Ser Ser Ser Trp Ala Pro
20 25 30

Phe Gln Thr Ser Glu Glu Ser Phe Gln His Glu Glu Gly Val Gln Asn
35 40 45

Lys Gln Arg Glu Arg Glu Arg Glu Arg Glu Arg Glu Arg Glu Arg Glu
50 55 60

Lys Arg Asn Ile Asn Asn Ala Gly Ser Lys Arg
65 70 75

<210> 287
<211> 83
<212> PRT
<213> Homo sapiens

<400> 287

Met Tyr Cys Val Phe Asn Arg Asn Glu Asp Ala Cys Arg Tyr Gly Ser
1 5 10 15

Ala Ile Gly Val Leu Ala Ser Leu Ala Tyr Gln Arg Tyr Lys Ala Gly
20 25 30

Val Asp Asp Phe Ile Gln Asn Tyr Val Asp Pro Thr Pro Asp Pro Asn
35 40 45

Thr Ala Tyr Ala Ser Tyr Pro Gly Ala Ser Val Asp Asn Tyr Gln Gln
50 55 60

Pro Pro Phe Thr Gln Asn Ala Glu Thr Thr Glu Gly Tyr Gln Pro Pro
65 70 75 80

Pro Val Tyr

<210> 288
<211> 117
<212> PRT
<213> Homo sapiens

<400> 288

Met Val Arg Ala Thr Ala Met Pro Thr Ser Leu Ser Arg Cys Thr Ala
1 5 10 15

Cys Ser Thr Ala Thr Arg Met Pro Ala Ala Met Ala Val Pro Ser Gly
20 25 30

Cys Trp Pro Pro Trp Pro Thr Ser Ala Thr Arg Leu Ala Trp Thr Thr
35 40 45

Ser Ser Arg Ile Thr Leu Thr Pro Leu Arg Thr Pro Thr Leu Pro Thr
50 55 60

Pro Pro Thr Gln Val His Leu Trp Thr Thr Thr Asn Ser His Pro Ser
65 70 75 80

Pro Arg Thr Arg Arg Pro Pro Arg Ala Thr Ser Arg Pro Leu Cys Thr

85 90 95

Glu Arg Arg Leu Ala Trp Glu Gly Gly Gln Arg Gly Pro Ser Pro Leu
100 105 110

Pro Trp Thr Phe Pro
115

<210> 289
<211> 1280
<212> DNA
<213> Homo sapiens

<400> 289
gtcagccgca tcttcttttg cgtcgccagc cgagccacat cgctcagaca ccatggggaa 60

ggtgaaggtc ggagtcaacg gatttggtcg tattgggcgc ctggtcacca gggctgcttt 120

taactctggt aaagtggata ttgttgccat caatgacccc ttcattgacc tcaactacat 180

ggtttacatg ttccaatatg attccaccca tggcaaattc catggcaccg tcaaggctga 240

gaacgggaag cttgtcatca atggaaatcc catcaccatc ttccaggagc gagatccctc 300

caaaatcaag tggggcgatg ctggcgctga gtacgtcgtg gagtccactg gcgtcttcac 360

caccatggag aaggctgggg ctcatttgca ggggggagcc aaaagggtca tcatctctgc 420

cccctctgct gatgccccca tgttcgtcat gggtgtgaac catgagaagt atgacaacag 480

cctcaagatc atcagcaatg cctcctgcac caccaactgc ttagcacccc tggccaaggt 540

catccatgac aactttggta tcgtggaagg actcatgacc acagtccatg ccatcactgc 600

cacccagaag actgtggatg gcccctccgg gaaactgtgg cgtgatggcc gcggggctct 660

ccagaacatc atccctgcct ctactggcgc tgccaaggct gtgggcaagg tcatccctga 720

gctgaacggg aagctcactg gcatggcctt ccgtgtcccc actgccaacg tgtcagtggt 780

ggacctgacc tgccgtctag aaaaacctgc caaatatgat gacatcaaga aggtggtgaa 840

gcaggcgtcg gagggccccc tcaagggcat cctgggctac actgagcacc aggtggtctc 900

ctctgacttc aacagcgaca cccactcctc cacctttgac gctggggctg gcattgccct 960

caacgaccac tttgtcaagc tcatttcctg gtatgacaac gaatttggct acagcaacag 1020

ggtggtggac ctcatggccc acatggcctc caaggagtaa gacccctgga ccaccagccc 1080

cagcaagagc acaagaggaa gagagagacc ctcactgctg gggagtccct gccacactca 1140

gtcccccacc acactgaatc tcccctcctc acagttgcca tgtagacccc ttgaagaggg 1200

gaggggccta gggagccgca ccttgtcatg taccatcaat aaagtaccct gtgctcaacc 1260

aaaaaaaaaa aaaaaaaaaa 1280

<210> 290
<211> 2978
<212> DNA
<213> Homo sapiens

<400> 290
gccgtgagaa cacgctgtgt ggctgaaaag tgaaggcaag agctgatttg gcctctgtgc 60

tcccctccgc aaggggatcg ttttctccag aagagctgga tattctttcg cccagttatg 120

gcagacaagt taacgagaat tgctattgtc aaccatgaca aatgtaaacc taagaaatgt 180

cgacaggaat gcaaaaagag ttgtcctgta gttcgaatgg gaaaattatg catagaggtt 240

acaccccaga gcaaaatagc atggatttcc gaaactcttt gtattggttg tggtatctgt 300

attaagaaat gccccttggg cgccttatca attgtcaatc taccaagcaa cttggaaaaa 360

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<212> DNA
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ggctgtgaga tttactctga ttctgggaac catgcctcca tgatccaagg gattcgaaac 1200

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gctggcttca tcttcaccac ctctctgcca cccatgctgc tggctggagc cctggagtct 1620

gtgcggatcc tgaagagcgc tgagggacgg gtgcttcgcc gccagcacca gcgcaacgtc 1680

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agcagacata acatctacgt gcaagcaatc aattacccta cggtgccccg gggagaagag 1860

ctcctacgga ttgcccccac ccctcaccac acaccccaga tgatgaacta cttccttgag 1920

aatctgctag tcacatggaa gcaagtgggg ctggaactga agcctcattc ctcagctgag 1980

tgcaacttct gcaggaggcc actgcatttt gaagtgatga gtgaaagaga gaagtcctat 2040

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ttaaccccag gccattatca tatccagatg gtcttcagag ttgtctttat atgtgaatta 2160

agttatatta aattttaatc tatagtaaaa acatagtcct ggaaataaat tcttgcttaa 2220

atggtgaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2280

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<210> 356
<211> 361

<212> PRT
<213> Homo sapiens

<400> 356

Met Phe Ser Ser Val Ala His Leu Ala Arg Ala Asn Pro Phe Asn Thr
1 5 10 15

Pro His Leu Gln Leu Val His Asp Gly Leu Gly Asp Leu Arg Ser Ser
20 25 30

Ser Pro Gly Pro Thr Gly Gln Pro Arg Arg Pro Arg Asn Leu Ala Ala
35 40 45

Ala Ala Val Glu Glu Tyr Ser Cys Glu Phe Gly Ser Ala Lys Tyr Tyr
50 55 60

Ala Leu Cys Gly Phe Gly Gly Val Leu Ser Cys Gly Leu Thr His Thr
65 70 75 80

Ala Val Val Pro Leu Asp Leu Val Lys Cys Arg Met Gln Val Asp Pro
85 90 95

Gln Lys Tyr Lys Gly Ile Phe Asn Gly Phe Ser Val Thr Leu Lys Glu
100 105 110

Asp Gly Val Arg Gly Leu Ala Lys Gly Trp Ala Pro Thr Phe Leu Gly
115 120 125

Tyr Ser Met Gln Gly Leu Cys Lys Phe Gly Phe Tyr Glu Val Phe Lys
130 135 140

Val Leu Tyr Ser Asn Met Leu Gly Glu Glu Asn Thr Tyr Leu Trp Arg
145 150 155 160

Thr Ser Leu Tyr Leu Ala Ala Ser Ala Ser Ala Glu Phe Phe Ala Asp

165 170 175

Ile Ala Leu Ala Pro Met Glu Ala Ala Lys Val Arg Ile Gln Thr Gln
180 185 190

Pro Gly Tyr Ala Asn Thr Leu Arg Asp Ala Ala Pro Lys Met Tyr Lys
195 200 205

Glu Glu Gly Leu Lys Ala Phe Tyr Lys Gly Val Ala Pro Leu Trp Met
210 215 220

Arg Gln Ile Pro Tyr Thr Met Met Lys Phe Ala Cys Phe Glu Arg Thr
225 230 235 240

Val Glu Ala Leu Tyr Lys Phe Val Val Pro Lys Pro Arg Ser Glu Cys
245 250 255

Ser Lys Pro Glu Gln Leu Val Val Thr Phe Val Ala Gly Tyr Ile Ala
260 265 270

Gly Val Phe Cys Ala Ile Val Ser His Pro Ala Asp Ser Val Val Ser
275 280 285

Val Leu Asn Lys Glu Lys Gly Ser Ser Ala Ser Leu Val Leu Lys Arg
290 295 300

Leu Gly Phe Lys Gly Val Trp Lys Gly Leu Phe Ala Arg Ile Ile Met
305 310 315 320

Ile Gly Thr Leu Thr Ala Leu Gln Trp Phe Ile Tyr Asp Ser Val Lys
325 330 335

Val Tyr Phe Arg Leu Pro Arg Pro Pro Pro Pro Glu Met Pro Glu Ser
340 345 350

Leu Lys Lys Lys Leu Gly Leu Thr Gln
355 360

<210> 357
<211> 640
<212> PRT
<213> Homo sapiens

<400> 357

Met Glu Ser Val Val Arg Arg Cys Pro Phe Leu Ser Arg Val Pro Gln
1 5 10 15

Ala Phe Leu Gln Lys Ala Gly Lys Ser Leu Leu Phe Tyr Ala Gln Asn
20 25 30

Cys Pro Lys Met Met Glu Val Gly Ala Lys Pro Ala Pro Arg Ala Leu
35 40 45

Ser Thr Ala Ala Val His Tyr Gln Gln Ile Lys Glu Thr Pro Pro Ala
50 55 60

Ser Glu Lys Asp Lys Thr Ala Lys Ala Lys Val Gln Gln Thr Pro Asp
65 70 75 80

Gly Ser Gln Gln Ser Pro Asp Gly Thr Gln Leu Pro Ser Gly His Pro
85 90 95

Leu Pro Ala Thr Ser Gln Gly Thr Ala Ser Lys Cys Pro Phe Leu Ala
100 105 110

Ala Gln Met Asn Gln Arg Gly Ser Ser Val Phe Cys Lys Ala Ser Leu
115 120 125

Glu Leu Gln Glu Asp Val Gln Glu Met Asn Ala Val Arg Lys Glu Val
130 135 140

Ala Glu Thr Ser Ala Gly Pro Ser Val Val Ser Val Lys Thr Asp Gly
145 150 155 160

Gly Asp Pro Ser Gly Leu Leu Lys Asn Phe Gln Asp Ile Met Gln Lys
165 170 175

Gln Arg Pro Glu Arg Val Ser His Leu Leu Gln Asp Asn Leu Pro Lys
180 185 190

Ser Val Ser Thr Phe Gln Tyr Asp Arg Phe Phe Glu Lys Lys Ile Asp
195 200 205

Glu Lys Lys Asn Asp His Thr Tyr Arg Val Phe Lys Thr Val Asn Arg
210 215 220

Arg Ala His Ile Phe Pro Met Ala Asp Asp Tyr Ser Asp Ser Leu Ile
225 230 235 240

Thr Lys Lys Gln Val Ser Val Trp Cys Ser Asn Asp Tyr Leu Gly Met
245 250 255

Ser Arg His Pro Arg Val Cys Gly Ala Val Met Asp Thr Leu Lys Gln
260 265 270

His Gly Ala Gly Ala Gly Gly Thr Arg Asn Ile Ser Gly Thr Ser Lys
275 280 285

Phe His Val Asp Leu Glu Arg Glu Leu Ala Asp Leu His Gly Lys Asp
290 295 300

Ala Ala Leu Leu Phe Ser Ser Cys Phe Val Ala Asn Asp Ser Thr Leu
305 310 315 320

Phe Thr Leu Ala Lys Met Met Pro Gly Cys Glu Ile Tyr Ser Asp Ser
325 330 335

Gly Asn His Ala Ser Met Ile Gln Gly Ile Arg Asn Ser Arg Val Pro
340 345 350

Lys Tyr Ile Phe Arg His Asn Asp Val Ser His Leu Arg Glu Leu Leu
355 360 365

Gln Arg Ser Asp Pro Ser Val Pro Lys Ile Val Ala Phe Glu Thr Val
370 375 380

His Ser Met Asp Gly Ala Val Cys Pro Leu Glu Glu Leu Cys Asp Val
385 390 395 400

Ala His Glu Phe Gly Ala Ile Thr Phe Val Asp Glu Val His Ala Val
405 410 415

Gly Leu Tyr Gly Ala Arg Gly Gly Gly Ile Gly Asp Arg Asp Gly Val
420 425 430

Met Pro Lys Met Asp Ile Ile Ser Gly Thr Leu Gly Lys Ala Phe Gly
435 440 445

Cys Val Gly Gly Tyr Ile Ala Ser Thr Ser Ser Leu Ile Asp Thr Val
450 455 460

Arg Ser Tyr Ala Ala Gly Phe Ile Phe Thr Thr Ser Leu Pro Pro Met
465 470 475 480

Leu Leu Ala Gly Ala Leu Glu Ser Val Arg Ile Leu Lys Ser Ala Glu
485 490 495

Gly Arg Val Leu Arg Arg Gln His Gln Arg Asn Val Lys Leu Met Arg
500 505 510

Gln Met Leu Met Asp Ala Gly Leu Pro Val Val His Cys Pro Ser His
515 520 525

Ile Ile Pro Val Arg Val Ala Asp Ala Ala Lys Asn Thr Glu Val Cys
530 535 540

Asp Glu Leu Met Ser Arg His Asn Ile Tyr Val Gln Ala Ile Asn Tyr
545 550 555 560

Pro Thr Val Pro Arg Gly Glu Glu Leu Leu Arg Ile Ala Pro Thr Pro
565 570 575

His His Thr Pro Gln Met Met Asn Tyr Phe Leu Glu Asn Leu Leu Val
580 585 590

Thr Trp Lys Gln Val Gly Leu Glu Leu Lys Pro His Ser Ser Ala Glu
595 600 605

Cys Asn Phe Cys Arg Arg Pro Leu His Phe Glu Val Met Ser Glu Arg
610 615 620

Glu Lys Ser Tyr Phe Ser Gly Leu Ser Lys Leu Val Ser Ala Gln Ala
625 630 635 640

<210> 358
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 358

Gln Ile Gly Ala Lys Phe Trp Glu Val

1 5

<210> 359
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 359

Phe Met Pro Gly Phe Ala Pro Leu Thr
1 5

<210> 360
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 360

Thr Leu Leu Val Ala Val Phe Gln Asp Val
1 5 10

<210> 361
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 361

Val Ala Tyr Leu Gly Phe Val Phe Tyr Leu
1 5 10

<210> 362
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 362

Leu Leu Pro Thr Leu Arg Lys Gln Tyr Cys
1 5 10

<210> 363
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 363

Met Val Tyr Asp Leu Tyr Lys Thr Leu
1 5

<210> 364
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 364

Gly Leu Cys Lys Phe Gly Phe Tyr Glu Val
1 5 10

<210> 365
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 365

Phe Gly Phe Tyr Glu Val Phe Lys Val
1 5

<210> 366
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 366

Leu Gln Trp Phe Ile Tyr Asp Ser Val
1 5

<210> 367
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 367

Ala Leu Ala Pro Met Glu Ala Ala Lys Val
1 5 10

<210> 368
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 368

Arg Thr Val Glu Ala Leu Tyr Lys Phe Val
1 5 10

<210> 369
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 369

Val Leu Ser Cys Gly Leu Thr His Thr
1 5

<210> 370
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 370

Ala Leu Leu Phe Ser Ser Cys Phe Val
1 5

<210> 371

<211> 10
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 371

Phe Leu Ser Arg Val Pro Gln Ala Phe Leu
1 5 10

<210> 372
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 372

Met Leu Leu Ala Gly Ala Leu Glu Ser Val
1 5 10

<210> 373
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 373

Leu Leu Gln Asp Asn Leu Pro Lys Ser Val
1 5 10

<210> 374
<211> 9

<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 374

Leu Met Ser Arg His Asn Ile Tyr Val
1 5

<210> 375
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 375

Ser Leu Ile Asp Thr Val Arg Ser Tyr Ala
1 5 10

<210> 376
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 376

Phe Leu Gln Lys Ala Gly Lys Ser Leu Leu
1 5 10

<210> 377
<211> 9
<212> PRT

<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 377

Leu Leu Phe Ser Ser Cys Phe Val Ala
1 5

<210> 378
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 378

Gly Leu Leu Lys Asn Phe Gln Asp Ile
1 5

<210> 379
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 379

Ser Val Trp Cys Ser Asn Asp Tyr Leu
1 5

<210> 380
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 380

Leu Leu Val Thr Trp Lys Gln Val Gly Leu
1 5 10

<210> 381
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 381

Val Ala Asn Asp Ser Thr Leu Phe Thr Leu
1 5 10

<210> 382
<211> 974
<212> DNA
<213> Homo sapiens

<400> 382
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gcccctacca cttccgggcc cccagccgca tcttctggcg gaccgtgcga ggtatgctgc 120

cccacaaaac caagcgaggc caggccgctc tggaccgtct caaggtgttt gacggcatcc 180

cacctcccta cgacaagaaa aagcggatgg tggttcctgc tgccctcaag gtcgtgcgtc 240

tgaagcctac aagaaagttt gcctatctgg ggcgcctggc tcacgaggtt ggctggaagt 300

accaggcagt gacagccacc ctggaggaga agaggaaaga gaaagccaag atccactacc 360

ggaagaagaa acagctcatg aggctacgga aacaggccga gaagaacgtg gagaagaaaa 420

ttgacaaata cacagaggtc ctcaagaccc acggactcct ggtctgagcc caataaagac 480

tgttaattcc tcatgcgttg cctgcccttc ctccattgtt gccctggaat gtacgggacc 540

caggggcagc agcagtccag gtgccacagg cagccctggg acataggaag ctgggagcaa 600

ggaaagggtc ttagtcactg cctcccgaag ttgcttgaaa gcactcggag aattgtgcag 660

gtgtcattta tctatgacca ataggaagag caaccagtta ctatgagtga aagggagcca 720

gaagactgat tggagggccc tatcttgtga gtggggcatc tgttggactt cccacctggt 780

catatactct gcagctgtta gaatgtgcaa gcacttgggg acagcatgag cttgctgttg 840

tacacagggt atttctagaa gcagaaatag actgggaaga tgcacaacca aggggttaca 900

ggcatcgccc atgctcctca cctgtatttt gtaatcagaa ataaattgct tttaaagaaa 960

aaaaaaaaaa aaaa 974

<210> 383
<211> 821
<212> DNA
<213> Homo sapiens

<400> 383
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ccgtcaccaa gttgggccgc ttggtcaagg acatgaagat caagtccctg gaggagatct 120

atctcttctc cctgcccatt aaggaatcag agatcattga tttcttcctg ggggcctctc 180

tcaaggatga ggttttgaag attatgccag tgcagaagca gacccgtgcc ggccagcgca 240

ccaggttcaa ggcatttgtt gctatcgggg actacaatgg ccacgtcggt ctgggtgtta 300

agtgctccaa ggaggtggcc accgccatcc gtggggccat catcctggcc aagctctcca 360

tcgtccccgt gcgcagaggc tactggggga acaagatcgg caagccccac actgtccctt 420

gcaaggtgac aggccgctgc ggctctgtgc tggtacgcct catccctgca cccaggggca 480

ctggcatcgt ctccgcacct gtgcctaaga agctgctcat gatggctggt atcgatgact 540

gctacacctc agcccggggc tgcactgcca ccctgggcaa cttcgccaag gccacctttg 600

atgccatttc taagacctac agctacctga cccccgacct ctggaaggag actgtattca 660

ccaagtctcc ctatcaggag ttcactgacc acctcgtcaa gacccacacc agagtctccg 720

tgcagcggac tcaggctcca gctgtggcta caacataggg tttttataca agaaaaataa 780

agtgaattta gcgtgaaaaa aaaaaaaaaa aaaaaaaaaa a 821

<210> 384
<211> 741
<212> DNA
<213> Homo sapiens

<400> 384
gcggcgtgag aagccatgag cagcaaagtc tctcgcgaca ccctgtacga ggcggtgcgg 60

gaagtcctgc acgggaacca gcgcaagcgc cgcaagttcc tggagacggt ggagttgcag 120

atcagcttga agaactatga tccccagaag gacaagcgct tctcgggcac cgtcaggctt 180

aagtccactc cccgccctaa gttctctgtg tgtgtcctgg gggaccagca gcactgtgac 240

gaggctaagg ccgtggatat cccccacatg gacatcgagg cgctgaaaaa actcaacaag 300

aataaaaaac tggtcaagaa gctggccaag aagtatgatg cgtttttggc ctcagagtct 360

ctgatcaagc agattccacg aatcctcggc ccaggtttaa ataaggcagg aaagttccct 420

tccctgctca cacacaacga aaacatggtg gccaaagtgg atgaggtgaa gtccacaatc 480

aagttccaaa tgaagaaggt gttatgtctg gctgtagctg ttggtcacgt gaagatgaca 540

gacgatgagc ttgtgtataa cattcacctg gctgtcaact tcttggtgtc attgctcaag 600

aaaaactggc agaatgtccg ggccttatat atcaagagcc ccatgggcaa gccccagcgc 660

ctatattaag gcccatttga ataaattcta tttcccgttt aaaaaaaaaa aaaaaaaaaa 720

aaaaaaaaaa aaaaaaaaaa a 741

<210> 385
<211> 142
<212> PRT

<213> Homo sapiens

<400> 385

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Met Asn Thr Asn Pro Ser Arg Gly Pro Tyr His Phe Arg Ala Pro Ser
1               5                  10                  15

Arg Ile Phe Trp Arg Thr Val Arg Gly Met Leu Pro His Lys Thr Lys
            20                  25                  30

Arg Gly Gln Ala Ala Leu Asp Arg Leu Lys Val Phe Asp Gly Ile Pro
        35                  40                  45

Pro Pro Tyr Asp Lys Lys Lys Arg Met Val Val Pro Ala Ala Leu Lys
    50                  55                  60

Val Val Arg Leu Lys Pro Thr Arg Lys Phe Ala Tyr Leu Gly Arg Leu
65                  70                  75                  80

Ala His Glu Val Gly Trp Lys Tyr Gln Ala Val Thr Ala Thr Leu Glu
                85                  90                  95

Glu Lys Arg Lys Glu Lys Ala Lys Ile His Tyr Arg Lys Lys Lys Gln
            100                 105                 110

Leu Met Arg Leu Arg Lys Gln Ala Glu Lys Asn Val Glu Lys Lys Ile
        115                 120                 125

Asp Lys Tyr Thr Glu Val Leu Lys Thr His Gly Leu Leu Val
    130                 135                 140
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<210> 386
<211> 233
<212> PRT
<213> Homo sapiens

<400> 386

Met Pro Val Thr Lys Leu Gly Arg Leu Val Lys Asp Met Lys Ile Lys
1 5 10 15

Ser Leu Glu Glu Ile Tyr Leu Phe Ser Leu Pro Ile Lys Glu Ser Glu
20 25 30

Ile Ile Asp Phe Phe Leu Gly Ala Ser Leu Lys Asp Glu Val Leu Lys
35 40 45

Ile Met Pro Val Gln Lys Gln Thr Arg Ala Gly Gln Arg Thr Arg Phe
50 55 60

Lys Ala Phe Val Ala Ile Gly Asp Tyr Asn Gly His Val Gly Leu Gly
65 70 75 80

Val Lys Cys Ser Lys Glu Val Ala Thr Ala Ile Arg Gly Ala Ile Ile
85 90 95

Leu Ala Lys Leu Ser Ile Val Pro Val Arg Arg Gly Tyr Trp Gly Asn
100 105 110

Lys Ile Gly Lys Pro His Thr Val Pro Cys Lys Val Thr Gly Arg Cys
115 120 125

Gly Ser Val Leu Val Arg Leu Ile Pro Ala Pro Arg Gly Thr Gly Ile
130 135 140

Val Ser Ala Pro Val Pro Lys Lys Leu Leu Met Met Ala Gly Ile Asp
145 150 155 160

Asp Cys Tyr Thr Ser Ala Arg Gly Cys Thr Ala Thr Leu Gly Asn Phe
165 170 175

Ala Lys Ala Thr Phe Asp Ala Ile Ser Lys Thr Tyr Ser Tyr Leu Thr

180 185 190

Pro Asp Leu Trp Lys Glu Thr Val Phe Thr Lys Ser Pro Tyr Gln Glu
195 200 205

Phe Thr Asp His Leu Val Lys Thr His Thr Arg Val Ser Val Gln Arg
210 215 220

Thr Gln Ala Pro Ala Val Ala Thr Thr
225 230

<210> 387
<211> 217
<212> PRT
<213> Homo sapiens

<400> 387

Met Ser Ser Lys Val Ser Arg Asp Thr Leu Tyr Glu Ala Val Arg Glu
1 5 10 15

Val Leu His Gly Asn Gln Arg Lys Arg Arg Lys Phe Leu Glu Thr Val
20 25 30

Glu Leu Gln Ile Ser Leu Lys Asn Tyr Asp Pro Gln Lys Asp Lys Arg
35 40 45

Phe Ser Gly Thr Val Arg Leu Lys Ser Thr Pro Arg Pro Lys Phe Ser
50 55 60

Val Cys Val Leu Gly Asp Gln Gln His Cys Asp Glu Ala Lys Ala Val
65 70 75 80

Asp Ile Pro His Met Asp Ile Glu Ala Leu Lys Lys Leu Asn Lys Asn
85 90 95

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Lys Lys Leu Val Lys Lys Leu Ala Lys Lys Tyr Asp Ala Phe Leu Ala
            100                 105                 110

Ser Glu Ser Leu Ile Lys Gln Ile Pro Arg Ile Leu Gly Pro Gly Leu
        115                 120                 125

Asn Lys Ala Gly Lys Phe Pro Ser Leu Leu Thr His Asn Glu Asn Met
    130                 135                 140

Val Ala Lys Val Asp Glu Val Lys Ser Thr Ile Lys Phe Gln Met Lys
145                 150                 155                 160

Lys Val Leu Cys Leu Ala Val Ala Val Gly His Val Lys Met Thr Asp
                165                 170                 175

Asp Glu Leu Val Tyr Asn Ile His Leu Ala Val Asn Phe Leu Val Ser
            180                 185                 190

Leu Leu Lys Lys Asn Trp Gln Asn Val Arg Ala Leu Tyr Ile Lys Ser
        195                 200                 205

Pro Met Gly Lys Pro Gln Arg Leu Tyr
    210                 215
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<210> 388
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 388

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Leu Val Leu Asp Gly Arg Gly His Leu
1               5
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<210> 389
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 389

His Leu Leu Gly Arg Leu Ala Ala Ile
1 5

<210> 390
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 390

Ala Ile Val Ala Lys Gln Val Leu Leu
1 5

<210> 391
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 391

Val Leu Leu Gly Arg Lys Val Val Val
1 5

<210> 392
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 392

Ala Phe Leu Arg Lys Arg Met Asn Thr
1 5

<210> 393
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 393

His Phe Arg Ala Pro Ser Arg Ile Phe
1 5

<210> 394
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 394

Val Leu Lys Thr His Gly Leu Leu Val
1 5

<210> 395

<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 395

Pro Val Thr Lys Leu Gly Arg Leu Val
1 5

<210> 396
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 396

Lys Ile Met Pro Val Gln Lys Gln Thr
1 5

<210> 397
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 397

Val Thr Gly Arg Cys Gly Ser Val Leu
1 5

<210> 398
<211> 9

<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 398

Arg Leu Ile Pro Ala Pro Arg Gly Thr
1 5

<210> 399
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 399

Asp Leu Trp Lys Glu Thr Val Phe Thr
1 5

<210> 400
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 400

His Leu Val Lys Thr His Thr Arg Val
1 5

<210> 401
<211> 9
<212> PRT

<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 401

His Thr Arg Val Ser Val Gln Arg Thr
1 5

<210> 402
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Designed peptide recognized by HLA-A2 restricted cytotoxic T lymphocytes

<400> 402

Arg Thr Gln Ala Pro Ala Val Ala Thr
1 5

<210> 403
<211> 9
<212> PRT
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Thr Leu Tyr Glu Ala Val Arg Glu Val
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Glu Thr Val Glu Leu Gln Ile Ser Leu
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Lys Val Asp Glu Val Lys Ser Thr Ile
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Thr Ile Lys Phe Gln Met Lys Val Leu
1 5

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Lys Val Leu Cys Leu Ala Val Ala Val
1 5

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Ser Thr Met Gly Lys Pro Gln Arg Leu
1 5